DOCUMENT RESUME

ED 224 714	SE 039 835
AUTHOR	Yakes, Nancy Ann
TITLE	Communication and Information Theory: A Curriculum Guide for the School of Natural Resources.
PUB DATE	Aug 82
NOTE	173p.; Master's Thesis, University of Michigan.
PUB TYPE	Dissertations/Theses - Master Theses (042) -- Reports - Descriptive (141) -- Guides - Classroom Use - Guides (For Teachers) (052)
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	*Communication (Thought Transfer); *Course Content; *Course Descriptions; Curriculum Development; Curriculum Evaluation; Curriculum Guides; Decision Making; *Environmental Education; Higher Education; Information Dissemination; *Information Science; Information Sources; *Information Theory; Mass Media

ABSTRACT

Beginning in fall 1981, a course in communication and information theory was offered at the School of Natural Resources (University of Michigan). Throughout the course, emphasis was placed on comparing communication strategies and effectiveness as well as providing models for interdisciplinary research and data management. Case study materials and decision-making activities were frequently employed. Issues covered were derived from reports of United Nations Educational, Scientific and Cultural Organization (UNESCO) International Commission for the Study of Communication Problems and other UNESCO materials on the New International Information and Communication Order. A brief description and evaluation of the course, the 12 course units, and bibliography are provided in this document. Unit 1 is the course overview/introduction. Units 2 and 3 focus on the nature of information (objectivity/observables and interpretation). Units 4-6 focus on sources (indexing for management, information theory and integrative research, and information management models). Units 7-9 address information dissemination concerns (communication theory, mass media, and alternative media). Decision-making and effective communication, information technology and futures, and international information concerns are considered in units 10-12 respectively. Course outline, reading list, and course evaluation form are included in an appendix. Overall favorable student/teacher reaction to the course is reported. Revisions based on student/teacher evaluations are noted. (Author/JN)

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COMMUNICATION AND INFORMATION THEORY:
A CURRICULUM GUIDE FOR THE SCHOOL OF NATURAL RESOURCES

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by

Nancy Ann Yakes

A thesis submitted in partial fulfillment of the requirement for the degree of Master of Science (Natural Resources) at the University of Michigan

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Acknowledgements

This curriculum guide is a composite of many people's efforts and suggestions which are gratefully acknowledged. I expecially depended upon the guidance and support of Prof. Ron Rollet and Rich Block during the year and a half of preparation, execution and assessment of the project.

Professor Fred Hendle of the Physics Department graciously allowed me to adapt his unit on "Rhetoric" from his Physics 120 course, an experimental course no longer offered at the University. The technique for introducing indexing concepts in a painless manner were first demonstrated by Ann McLarty of the University's graduate library reference staff. Professor Michael Keresztesi of Wayne State University was the source for the analysis of research materials in the science, social sciences, and humanities. Karen Sayer of the University's Michigan Media Center guided my initial selections of appropriate films. Soma Wijayadas of the Unesco information office in New York City helped me locate materials on the "New International Information and Communication Order" in both the United States and Paris, France.

Grace Baysinger of the Natural Science Library and Claudia Schmitt of Ann Arbor Public Access television contributed greatly in making our two field trips engaging and memorable. The authors and editors of the articles listed in the bibliography were of great help. The enthusiasm and comments from students in the Fall, 1981 course supplied immeasurable creative input. Finally, a special thanks goes to my husband, Les Stone.

Any errors in interpretation or representation in this curriculum guide are solely my own.

PART I: Introduction and Evaluation

Communication and Information Theories: A Course at the School of Natural Resources

Introduction

Beginning with Fall, 1981, a course in communication and information theory was offered at the School of Natural Resources. Throughout the course, emphasis was placed on comparing communication strategies and effectiveness as well as providing models for interdisciplinary research and data management. Case study materials and decision-making activities were frequently employed. The issues covered were derived from the reports of Unesco's International Commission for the Study of Communication Problems and other Unesco materials on the New International Information and Communication Order.

Interdependence of Communication and Information

Information provides the basis of communication, and the process of communication further defines informational needs: The two parts can be viewed as flip sides of the same coin. Environmental decisions are only infrequently made within a closed scientific community: More often, such decisions involve citizens participating with industries, consultants and planning boards. Relevant background data must be presented to decision-makers to provide a range of choices in a forum of open discussion and debate. The interrelated factors must be identified, tentatively balanced and monitored.

In a more general sense, information and communication technologies, such as satellite communications, home computer and video-text stations, and two-way cable televisions further merge the distinctions between information and communication, as information bases become increasingly interactive with the user. The diverse possibilities of communication technology have prompted the Unesco Intergovernmental Conference on Communication Policies in Africa to observe:

> Communication, always an important vehicle for information and a tool for the acquisition of knowledge and know-how, has assumed a more important dimension in the life of societies because of the progress communication has recently made as well as the possibilities it offers for greater communicability among men and among peoples.[1]

Access to, and interaction with technical information is one of the key elements of Unesco's New International Information and Communication Order.

Information: An Economic Base of the Future

Since 1972, the information and communication sector has accounted for more than half of the jobs in America.[2] A modest projection by Congress's Technology Assessment Office (TAO) estimates that by the year 2000, 65 percent of the American workforce will be employed in the information fields.[3] The information industry not only provides jobs, but also accounts for more than half of the gross national product with the production, transformation and distribution of information goods and services.[4] Consumption of "information services increased by 39 percent between the years 1950 to 1971, as compared with a growth of 5.7 percent in consumer goods as a whole."[5] In some countries, the information services sector comprises the only unit of growth for both employment and products.[6] The financial rewards in information management have prompted observers to call information a new national resource.[7] The TAO reported in 1981 that information and communication services are "as vital to the functioning of the U.S. economy and society as energy, if not more so."[8]

When one considers the dominant role of information in present and future economies, it becomes evident that a grasp of the fundamentals of information and communication is essential. The course offered at the School of Natural Resources provides a range of theoretical and practical information and communication skills designed for environmentalists. A summary of the course follows.

Nature of Information

The need for developing skills in data selection was noted in a 1981 report by the National Assessment of Educational Progress: "In a world overloaded with information, both a business and a personal advantage will go to those individuals who can sort the wheat from the chaft, the important information from the trivial."[9]

During the first few classes, students are encouraged to evaluate data for usefulness. Exercises in identifying proveable statements results in the ability to establish appropriate goals and objectives.[10] The debate on objective journalism[11] is opened and compared to other countries' policies on the role of news services.[12] Propaganda[13] and persuasive techniques[14] are explored. Case studies where researchers use the same evidence to arrive at different conclusions are also examined.[15, 16] These topics allow students to begin evaluating and selecting information that is relevant and necessary to their needs.

Information Theories

In both pure and applied research, selected principles are validated by experimentation and the results are communicated within a narrowly-enclosed scientific community. The distribution of articles and information within a scientific discipline is well organized and effective.[17] As noted by Thomas Austin, seeking environmental information requires more creative flexibility to locate multidisciplinary data:

> Many of the problems facing those working in the scientific and technical information (STI) field today may be traced to the fact that in the last few decades the emphasis of STI application has been shifting from the advancement of science to the solution of socio-technical problems and the formulation of public policy. Concurrently, the STI user audience has expanded beyond the scientist to include the engineer, public policy maker, attorney, regional planner, businessman, citizen's group, and individual taxpayer. 18

Although the need for multidisciplinary environmental materials has been recognized, specific tools for such activity have not yet been developed to assist the researcher.

To help the student efficiently locate environmental data, information theory systems are surveyed to trace the flow of data in science[19] and social science[20] fields. Computerized information retrieval through a variety of indexing and abstracting methods is demonstrated. Models of information management schemes for government documents,[21] ERIC,[22] U.S. Forest Service materials,[23] and the international Public Affairs Information Service's index [24] are exhibited to show various successful information management designs.

A midsemester information management assessment bibliography on a topic selected by the student provides a practical application for the theoretical concepts.

Communication Theories

Communication paradigms including sender-receiver, Shanon-Weaver, two-step flow, multi-step flow and general systems are presented to form a theoretical background of information diffusion.[25] Various communication campaigns are inspected to illustrate strategies employed and methods of measuring message effectiveness.[26]

Mass media types are surveyed[27] and the treatment of environmental issues in mass media is given special attention.[28] Criticism of mass media weaknesses are placed in context of Unesco's New International Information and Communication Order, as summarized in the following passage of the McBride Commission's Preliminary Report:

> The media still all too frequently engage in monologue: a one-way flow from the top downwards, from those who know to those who do not, from the informed to those to be informed, from the governing to the governed. Those concerned by the present situation and prospects of communication must seek to determine how monologue can be transformed into dialogue, how vertical communication without feedback can be transformed into a many-sided dialogue comprising responses from the grass-roots to the summit, and allowing horizontal exchanges on each level, and how a trend to "horizontal" communication (both within individual countries and between countries) can be promoted and reconciled with vertical structures reflecting a more or less authoritarian process. 29

Alternative, or mini- media are surveyed to include such examples as public access television[30] "alternative" community newspapers, and audience-specific environmental periodicals. Case studies on the innovative uses of video and other media to increase community communication and problem resolution are included.[31]

The "Challenge for Change" program on the Canadian Fogo Islands illustrates the possible directions open to communication and information horizontal diffusion. The Canadian government felt that the Fogo inhabitants would enjoy a higher standard of living and literacy if they were to relocate on the mainland. Using staff from the National Film Board of Canada, Fogo residents were asked to respond to the proposed relocation on videotape which would be shown to other residents in order to help prepare for the move, if selected. The results were much different than expected: Fogo inhabitants preferred to say on the island and used the video-taped conversations as a non-print medium to exchange views within the village and between communities in order to define, research and impliment a more diverse economic base for the islands. The interactive capabilities of video communication provided the vehicle for an exchange of information and a resolution of the problem.[32]

Information Technology Futures, International Issues

The remainder of the course is directed at applying communication and information theories to potential problems and issues. Familiarity with the rapidly evolving communications technologies--satellite transmissions, home computerized information centers, and possible capabilities of fiber optics are surveyed.[33] Interactions with SNR computers and presentations by local computer design consultants provides experience with automated data bases appropriate for independent researchers, small nonprofit environmental organizations, and large agency-related data bases.

Reports from Unesco's International Commission for the Study of Communication Problems help identify media issues of importance to developing nations and future international information policies.[34,35]

Case studies and small group activities on information and communication problems and strategies provides experience in "problem-solving exercises in order to prepare students to function in a society in which the management of information has become the fastest growing sector of the economy" as urged by the National Assessment of Educational Progress in 1981.[36]

The final project requires students to give an in-class presentation on the analysis and dissemination of information involved in a selected environmental issue. or problem. Projects included a handbook of wilderness area trails in Michigan (complete with researched maps, publication format, audience analysis and distributor), an article on comparative national park planning strategies in West Germany and the U.S., and a data base of environmental internships available in over 150 social action organizations.

The communication and information theory course aims to be comprehensive but is by no means complete. Certain aspects may be given greater emphasis and additional topics, such as interpersonal and organizational communication, could be included. In an area where new technologies and data bases are announced weekly, more recent articles will supplant previous materials. However, the appropriateness of theoretical information and communication training for natural resource students is evident.

FOOTNOTES

[1] Unesco, Intergovernmental Conference on Communication Policies, Africa, "The Yaounde Declaration," Yaounde, Cameroon, 22-31 July, 1980.

[2] Robert C. Cowen, "Study: computerized information will remold society," in the *Christian Science Monitor*, Oct. 29, 1981.

[3] *Ibid*.

[4] Unesco, International Commission for the Study of Communication Problems, "Interim report on Communication Problems in modern society," Paris; Unesco, 1978. p.59.

[5] *Ibid*.

[6] *Ibid*,, p. 60.

[7] Harlan Cleveland, "How leaders must change in the information age," in The *Christian Science Monitor*, 16 February, 1982.

[8] Cowen, *op. cit*.

[9] Edward B. Fisk, "Low reading comprehension found," in *New York Times*, 1981.

[10] Fred Hendle, "Operational Thinking," from Physics 120 course, The University of Michigan, 1973.

[11] Fred S. Siebert, *et. al*., *Four Theories of the Press*, Essay Index Reprint Series,(Freeport, NY: 1956),p. 6.

[12] *Ibid*.

[13] Paul Kecskemeti, "Propaganda," in the *Handbook of Communication*, Ithiel de Sola Pool, *et. al*, eds., (Chicago: Rand McNally Publishing Co., 1973), pp. 844-870.

[14] Keith R. Stamm, "Environment and Communication," in *Current Perspectives in Mass Communication Research*, eds., F. Gerald Kline and Phillip J. Tichenor, (Beverly Hills, CA: Sage Publications, 1972), pp. 265-295.

[15] Illinois Power Company, "Our Response to 60 Minutes," (videotape available from the company, circa 1979).

[16] Controversy over the Moon, Michigan Media number 4966, film.

[17] National Academy of Sciences and the National Academy of Engineering, *Scientific and Technical Communication: a pressing natimal problem and recommendations for its solution*, (Washington, DC: NAS, 1969). p. 88.

[18] Thomas Austin, "Challenges in meeting public needs for science information," in *Environmental Data Service*, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Nov., 177, p. 3.

[19] NAS-NAE, *op.cit*.

[20] Michael Keresztesi, "Lecture notes from Social Sciences Bibliographies classes," (Detroit, MI: Wayne State University, 1977),

[21] John L. Andriot, *Guide to U.S. Government Publications* (McLean, VA: Documents Index, 1978).

[22] ERIC Clearinghouse on Library and Information Sciences, *An ERIC Bibliography* (New York: CCM Information Industry Publications, 1972).

[23] U.S. Department of Agriculture, Forest Service, Pacific Southwest Forest and Range Experiement Station, *International Directory of Documentation Services Concerning Forestry and Forest Products* (April 1981), PSW-47.

[24] *P.A.I.S*. scope notes.

[25] Luis Ramiro Beltran, "Farewell to Aristotle: 'Horizontal" Communication," for Unesco's International Commission for the Study of Communication Problems, No. 48. (Paris: Unesco, 1978).

[26] Stamm, *op. cit*.

[27] John P. Robinson, "Mass Communication and Information Diffusion," in *Current Perspectives in Mass Communication Research*, ed. F. Gerald Kline (Beverly Hills, CA: Sage Publications, 1972), pp. 71-94.

[28] Peter M. Sandman, "Mass Environmental Education: Can the Media do the Job?" in *Environmental Education*, ed. by James A. Swan and William B. Stapp (New York: Wiley, 1974), pp. 207-247.

[29] Unesco, *op. cit*., p. 76.

[30] Andy Beecher, "Madison's Citicable-12 struggles for life while bringing city issues closer to people," in *Community Television Review* (July 1981), pp. 32-33.

[31] Leonard Henny, "Theory and Practice in the Social Use of Photo, Film and Video," monograph (Utrecht, Holland: Sociological Institute, 1978).

[32] Juan E. Diaz Bordenave, *Communication and Rural Development*, (Paris: Unesco, 1978), pp. 67-71.

[33] Lewis M. Branscomb, "Information: The Ultimate Frontier," in *Science*, vol. 203, 12 January 1979. pp. 143-147.

[34] Bamal El-Oteifi, "Call for a New International Information Order: Preliminary Remarks, " document from the International Commission for the Study of Communication Problems, no. 33 (Paris: Unesco, circa 1976).

[35] Unesco, *op. cit*.

[36] Fisk, *op. cit*.

Course Evaluations and Reflections

Several evaluation mechanisms were used to help assess the communication and information theories curriculum design from the first offering in the fall of 1981. In a nonquantitative sense, comments from the students and instructors were quite favorable regarding the weekly sessions, topics covered and assignments. For the instructors, the quality of class discussions, midterm bibliographies and final projects was high. For a quantitative assessment, we had three evaluation formats to draw upon: A Pre- and Post Test, the School of Natural Resources' standard course evaluation forms, and a unit-specific questionnaire. The results from these surveys follows.

Pre- and Post Test

The Pre- and Post Test (see next page) was developed from two motivations. One was to provide the students with a spectrum of interesting topics in the information and communication fields from which to open discussion on the course material. The second concern was to try to measure course learning beyond the in-class assignments. There was no reminder to study for the post test. The comparison of the pre- and post scores are given below and indicate that subject comprehension occurred.

PRE- AND POST TEST COMPARISONS

Question No.	PRE Correct	Incorrect	POST Correct	Incorrect
1		+	+	
2	+		+	
3	4	3	6	2
4	-	7	5	-
5	6	2	7	-
6	-	7	4	3
7	3	4	4	3
8	3	5	6	1
9	3	5	5	2
10	19	2	21	-
No. Answers/ Total Responses	38/73	35/73	58/69	11/69
PERCENTAGES	.52	.48	.84	.16

Figure 1

NR 501 Information Theory and Management, Fall, 1981

PRE AND POST TEST *Circle or write in your answer*

1. Where do you think most U.S. people get their everyday and environmental information? Rank the following sources 1-5 (5 is highest) to reflect how people would vote on their preferences and use:

Radio	TV	Newspapers	Magazines/Journals	Family/Friends
___	___	___	_____	____

2. What sources do environmentally-concerned people use to get their environmental data? (per. interviews in Sellers, Leonard, "Environment and Mass Media, J. Env. Educ. Fall, 1973) Rank the following sources 1-5 (5 is highest).

Radio	TV	Conservation Groups	Newspapers	Magazines
___	___	_____	_____	_____

3. An example of a tertiary material is (a) a paleozoic novel (b) an interview (c) an encyclopedia (d) a newspaper.

4. STI stands for ____.

5. A media gatekeeper is (a) in charge of circulation (b) determines the emphasis and content of news stories (c) coordinates advertising (d) watches FCC regulations.

6. India has had several 5-year plans to encourage rural development (ie., providing information on family planning, agricultural practices, increasing literacy) through enhanced communication systems. In 1975, India decided to concentrate on the following medium (choose one): (a) newspapers (b) songs and drama (c) TV satellites (d) radio (e) Charch Mandal (discussion groups in villages) (per Dube, S.E. "Development and Change in India," Communication & Change ed. W. Schramm, 1976)

7. Citation indexing is most useful for locating articles (a) by author reference in the bibliographies (b) by article title and author (c) by sponsoring institution (d) both a & c.

8. Public Affiars Information Service (a) summarizes U.N. meetings (b) indexes books and articles (c) indexes U.S. and some foreign government documents (d) both b&c.

9. Which U-M library has the most works (ie., indexes, books, journals) on solar energy? (a) Engineering library (b) Architecture Library (c) Natural Science Library (d) Graduate Library.

10. Assess and mark the following statements as "O" operational, proveable or "N" nonoperational:

O/N Watching television dulls our ability to fantasize and be creative.

O/N The quality of life is higher in rural areas than in cities.

O/N In 1980, the state of Illinoise produced over 199,000 cubic feet of low-level radioactive waste.

The questions with significant errors recorded during the post test may reflect more on the questionnaire design than on comprehension. Specifically, questions seven and eight both employ multiple choices with the correct answer requiring combined factors, such as "both a and b." Students who answered incorrectly did select an accurate response, but not the best answer. The test has been revised to elimate this confusion, since there had been no intent to have trick questions.

It is interesting that question six received so many incorrect answers even though we had mentioned the 1975 India five-year development plan several times. It seems that the correct answer (c), which is for a high technology program that proved to be not very successful, was so counter-intuitive that many students still elected a more appropriate low-technology response. This question generated a lively discussion in the Pre- Test stage and the incorrect responses in a historical context still demonstrate a comprehension of later analysis of the problem. A revised Pre- and Post Test, along with a discussion of the answers is provided in Unit 1 of the curriculum guide section.

School of Natural Resources Evaluation Forms

The standard school evaluation form gave very general positive sentiments regarding a) instructor presentation, b) assignments, exam, papers and problem sets, and c) overall comments. In all catagories, students responded with "outstanding" and "good," the top criteria of five possiblities. Almost all written evaluations were highly favorable.

> Course was very challenging, made me do some very difficult but rewarding work. Future use is endless, especiall for any research I may do.
>
> Good use of a variety of teaching techniques and information presentations. Will pursue some topics in my present...work.

> Midterm and final are main components and help one learn very good researching and analysing techniques.
>
> Instructors were concerned about students, always willing to help with problems and questions.

The one less favorable comment was:

> The course was not as challenging as I'd hoped and didn't turn out to be what I expected--was much more technical and more emphasis on library science than I was interested in. Material will be useful to a certain extent in future research projects, but I feel I could have gotten the same thing elsewhere.

We were aware that one student was not interested in the information theories since she had already chosen her area of specialty which was so new as to not have much written material available. Her interests were focused on communication theories which in the revised course will be given greater development.

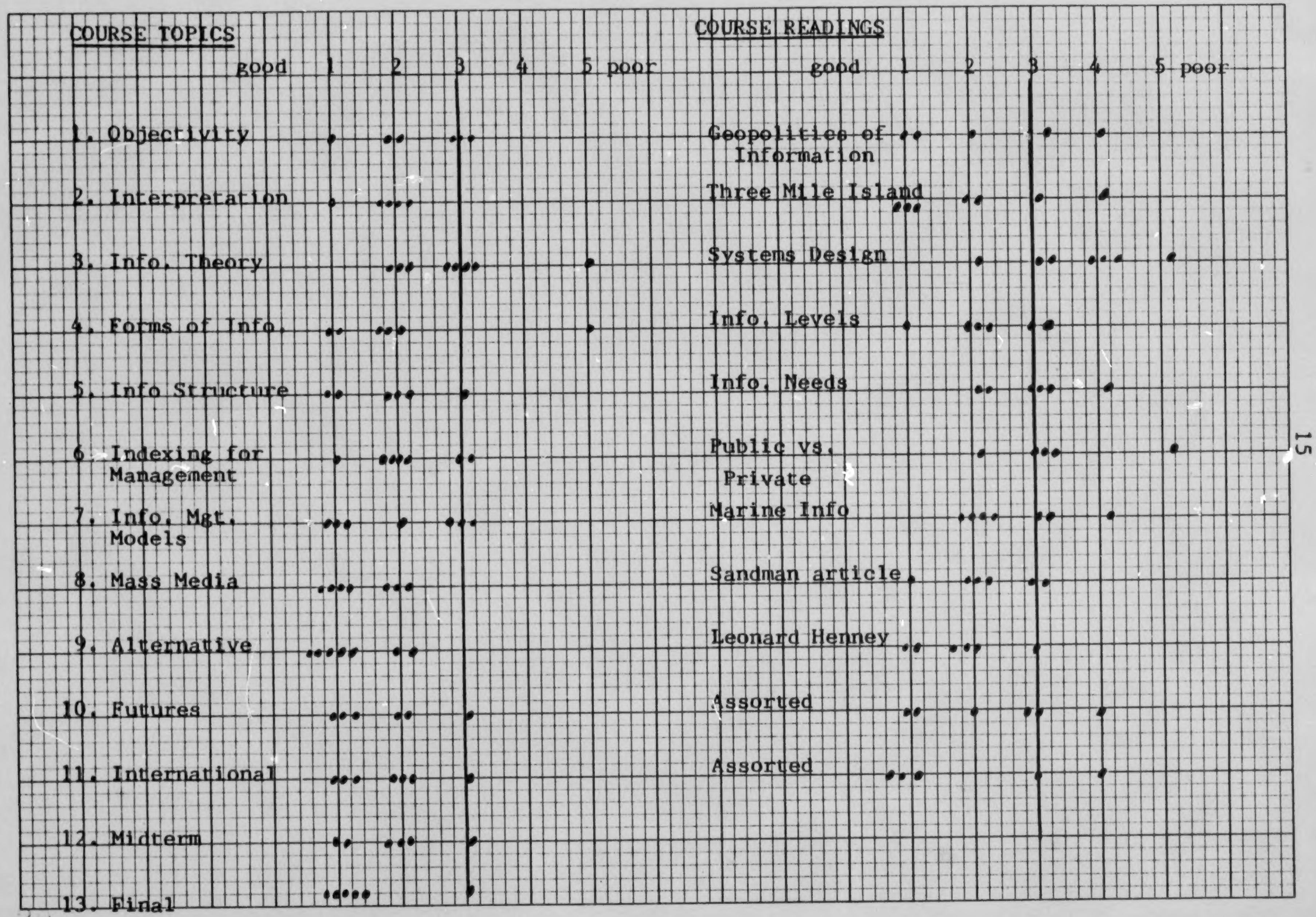
Course-Specific Questionnaire

The following comments are drawn from the chart, "Student Responses to a Course-Specific Questionnaire," on Figure 2. Note that not all students returned the evalua--tion forms and not all the questions were answered on those forms that were returned. (A copy of the entire questionnaire is in the Appendix.)

Students were asked to rate each session topic and reading from 1-5, with one being the highest, and five representing poor. A quick glance at the plotted points reveals that the most highly regarded sessions were numbers eight and nine, the topics dealing with media. The other sessions fared favorably with the possible exception of unit three, dealing with information theory. In the original presentation, the early combination of information and communication theories along with analytic models was confusing. In the revised course, the themes of similarities between information and communication are introduced at the beginning, and the specific theories are integrated

10 Squares to the Inch

Figure 2. COURSE SPECIFIC QUESTIONNAIRE RESULTS 12/82



into the course separately. Information theory appears in the revised unit on "Information Theory and Integrative Research," while communication theory introduces the units of mass and alternative media, under the theme of information diffusion.

Readings

The course readings received the strongest criticism because they were highly technical and lengthy. The majority student sentiment was that "many (readings) were technical, dry and hard to get through" although comments also included "most readings were significant to the subjects covered," and the readings "were provocative and sparked new ideas." (A list of the original article titles is in the Appendix.) The readings list has been largely revised and the more technical titles are recommended for instructors or students interested in comprehensive state-of-the-art articles. The current readings incorporate reports from Unesco, case studies of environmental information and communication campaigns, and communication research. A list of revised course readings is presented in Unit one, and is incorporated into the weekly sessions.

We also used Anthony Smith's Geopolitics of Information: How Western Culture Dominates the World (1980) as a text, and recorded mixed reactions from students and instructors. Smith's book is a collection of somewhat rambling essays that serves to aquaint the reader with a broad range of information issues and problems, often using European examples which are lost on American audiences. The book received mixed reviews from students, ranging from "fascinating" to "very wordy and redundant although good points were made." All students wrote that they would have liked to have discussed the book more, possibly because it is both interesting and confusing. Since the format of the book does not parallel the structure of the course, and class discussions to clarify the text can be counter-productive to the weekly topic, the use of the text should be carefully considered before including it in this course.

The addition of a paperback style book for writers would be useful for students to help them prepare their midterm bibliographies and for suggestions on conducting research. Turabian's Student's Guide for Writing College Papers is a good choice, although there are other equally good ones available. For the 1981 course, we shared copies of the Chicago Manual of Style (available in hardcover for $18) and students didn't really master bibliographic form or footnotes, as evident in the many questions asked on these formats after the course was over.

Midterm Bibliography and Final Project

From an instructor's viewpoint, the quality of written and oral work was very high. The midterm bibliographic assessment paper demonstrated understanding and ability in locating and assessing materials in an environmental area. The final in-class presentations exhibited data analytic skills and sophistication with communication techniques. On the course-specific questionnaire, questions 12 and 14 asked for comments about the midterm and final and received high ranking. "The final project really integrated all the course concepts," said one student, and another felt that "developing skills in organizing and giving presentations is something the University needs to emphasize." The midterm bibliographies were considered "very useful" and copies of the papers are kept on file in the Integrative Studies Center at the school for future reference.

Summary

Question 17 of the course-specific questionnaire asked, "what topics were most significant, interesting or useful" in the course and received these responses:

future technologies(3)
cable television (3)
Background in research and libraries (3)

alternatives and mass media (3)
environmental education and media (2)
third world issues (2)
federal government information
films shown in class
nature of information
research tips
public access television

When asked what areas of the course could have been given greater treatment, students identified: persuasion; controversial uses of media; moral responsibilities; how people are presently manipulating others with information; and how to use information to the best advantage. These written comments largely echoed the patterns plotted in the statistical ranking. Students liked and wanted more material on communication theory, media, persuasion and ethics. The revised curriculum guide incorporates these suggestions. The topics of research, information management, technological futures, and international issues were also considered valuable.

There were also requests for more time on each topic, although no one suggested which units could be dropped. In future incarnations of this course, one might elect to spend more time of fewer topics. Offering the course two or three times a week for an hour and a half each time instead of in a weekly three-hour seminar format might provide more time for students to assimulate and respond to the surveyed issues. Finally, new areas of interest are likely to arise in this rapidly developing field and new additions to the course are to be encouraged.

PART II: Course Units

1. Introduction and Overview of Course
2. Nature of Information I: Objectivity/Observables
3. Nature of Information II: Interpretation
4. Sources I: Indexing for Management
5. Sources II: Information Theory and Integrative Research
6. Sources III: Information Management Models
7. Information Dissemination I: Communication Theory
8. Information Dissemination II: Mass Media
9. Information Dissemination III: Alternative Media
10. Decision-Making and Effective Communication
11. Information Technology and Futures
12. International Information Issues

1. Introduction and Overview of Course

The National Assessment of Educational Progress urges schools to put more emphasis on "problem solving exercises in order to prepare students to function in a society in which the management of information has become the fastest growing sector of the economy." --NAEP Report, 1981

1. Introduction and Overview of Course - OUTLINE

---

a. Welcome. Introduce instructors and students.

b. Have students answer Pre- and Post Test. Discuss correct answers and begin thinking about the various areas of information and communication.

c. View film Berfinkle (Michigan Media no. 6753) 10 min., animated story of an employee asked to "berfinkle" and his many comical attempts to define and execute this nonsensical request.

d. Small group activity (3-4 people in a group) to first define "information and "communication," and then design a 12-week course on these topics. The purpose of this activity is to parallel the structure of the course. Groups present their proposals to the rest of the class. We provided OED definitions.

e. Break.

f. Distribute handouts and discuss:

Course Outline
Readings List
Midterm and Final Projects handouts

Discuss credit distribution:

Midterm Bibliography	25
4-5 Assignments	25
Final Project	30
Participation	20
Total	120

Mention location of a course bulletin board to post news clippings and assignments.

g. Questions and close. Distribute readings for next week.

Supplies: newsprint, markers, tape, film projector, film
handouts: Pre-and Post Test, Outline, Readings,
Midterm and Finals handouts
Handouts for next week (see next section for copies).

Communication and Information Theory - PRE AND POST TEST

1. Where do you think most U.S. people get their everyday and environmental information? Rank the following sources, A-F (A is highest) to reflect how people would vote on their preferences:

Radio	TV	Newspapers	Magazines/Journals	Family/Friends
—	—	—	—	—

2. What sources do environmentallyconcerned people use to get their environmental data? (Per. "Environment and Mass Media", J. Env. Educ., Fall 1973). Rank the following sources A-F (A is highest).

Radio	TV	Conservation Groups	Newspapers	Magazines
—	—	—	—	—

3. An example of a primary research material is a) microscope; b) an encyclopedia; c) an index; d) an interview.

4. NPR stands for ____.

5. A media gatekeeper is a) in charge of circulation b) determines the emphasis and content of news stories c) coordinates advertising d) watches FCC regulations.

6. India has had several 5-year plans to encourage rural development (ie., family planning, literacy, agricultural practices) through enhanced communication systems. In 1975, India decided to concentrate on the following medium (choose 1): a) newspapers; b) songs and drama; c) TV satellites; d) Charch Mandal (discussion groups in villages). (per. Dube, S.E. "Development and Change in India," in Schramm's Communication and Change, 1976.)

7. Citation indexing is most useful for locating articles a) by article title; b) by journal name; c) by author reference in the bibliographies; d) by chemical compound.

8) Public Affairs Information Service a) summarizes UN meetings; b) indexes books, articles and government documents; c) lists famous first facts; d) none of the above.

9. Which U-M library has the most material on solar energy? a) Engineering Library b) Architecture Library c) Natural Science Library d) Graduate Library.

10. Mark the following statements as "O" operational (can be proved) or "N" nonoperational:

O/N Watching television dulls our ability to be creative.
O/N Illinois produced over 199,000 cubic fett of low-level radioactive waste in 1980.
O/N The quality of life is higher in rural areas than in cities.

Pre- and Post Test - ANSWERS

1. The general public tends to depend on media sources in this order: TV; radio; newspapers; magazines; family. This is discussed in the "Information Diffusion" reading.

2. This trend is reversed for people interested in a more specific field, such as "the environment." For them, the more narrowly-focused sources are preferred in this order: conservation groups; magazines; newspapers; radio; TV. These two questions work together to show the differences between "mass" and "alternative" media.

3. d) interview. Primary materials are closest to the information or event, ie., research papers, statistics, newspapers, recordings. Secondary sources synthesize and organize primary materials and would include: popularized articles, feature stories, indexes, bibliographies.

4. National Public Radio.

5. b) determines the emphasis and content of news stories.

6. c) TV satellites. Incredibly, India chose a high-technology solution for 1975-1980, thinking it could help the country leap into the developed status. Can mention that the old criteria for "developed" was determined by counting number of radios and TVs, number of literate people, numbers of newspapers. This plan hoped to have village gatherings center around the television and teach values and skills remotely. (The experiment was not a success.)

7. a) by author reference in the bibliographies. Citation indexing allows one to find out who eles is referencing an article of interest.

8. b) P.A.I.S. indexes a lot of everything.

9. a) Engineering. All libraries listed have some materials on solar energy, but the engineering collection is by far the strongest and also holds a great deal of general environmental information as well.

10. N. O. N. Can raise the question, how would you be able to prove or substantiate the "N" statements? Lately, the "quality of life" concerns have been treated as quantifiable.

Communication and Information Theory

COURSE OUTLINE

1. Introduction and Overview of Course
2. Nature of Information I: Objectivity/Observables
3. Nature of Information II: Interpretation
4. Sources I: Indexing for Management
   MIDTERM BIBLIOGRAPHY TOPIC DUE
5. Sources II: Information Theory & Integrative Research
6. Sources III: Information Management Models
7. Information Dissemination I: Communication Theory
   MIDTERM BIBLIOGRAPHIES DUE
8. Information Dissemination II: Mass Media
   MAKE APPOINTMENTS TO DISCUSS FINAL PROJECTS
9. Information Dissemination III: Alternative Media
10. Decision-Making and Effective Communication
11. Information Technology and Futures
12. International Information Issues
13. FINAL PROJECTS DUE in class

READINGS:

Course pack of selected articles

Student's Guide for Writing College Papers, by Kate L. Turabian. 3rd ed. Chicago: University of Chicago Press, 1976.

Communication and Information Theory - COURSE READINGS

1. Introduction and Overview of Course - handouts

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2. Nature of Information I: Objectivity/Observables

Hendle, Fred, "Operational Thinking," from Physics 120 course, The University of Michigan, 1973.

"The New International Information Order, Who Wants IT? What is It?" New York: United Nations Association of the United States of America, circa 1980. Flyer.

Siebert, Fred S., *et al.*, *Four Theories of the Press*, Essay Index Reprint Series. Freeport, NY: Books For Libraries Press, 1956. p. 6.

Michigan Student Assembly, "Objective Journalism?" in *Maize*, Feb. 10, 1981. University of Michigan (student newspaper).

RECOMMENDED

Kecskemeti, Paul, "Propaganda," in the *Handbook of Communication*, Ithiel de Sola Pool, *et. al*, eds. Chicago: Rand McNally Publishing Co., 1973. pp. 844-870.

Tatarian, Robert, "News Flow in the Third World: An Overview," in *The Third World and Press Freedom*, ed. by Philip Horton. New York City: Praeger Publishers, 1978. pp. 1-54.

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3. Nature of Information II: Interpretation

Bettinghaus, Erwin P., "Persuasion and Human Interaction," in *Persuasive Communication*. New York City: Holt, Rinehart and Winston, Inc., 1968. pp. 9-24.

Stamm, Keith R., "Environment and Communication," in *Current Perspectives in Mass Communication Research*, eds. F. Gerald Kine and Phillip J. Tichenor. Beverly Hills, CA: Sage Publications, 1972. pp. 265-295.

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4. Sources I: Indexing for Management

Miloy, Leatha F., "Coastal and Marine Information Programs," in *Coastal Zone Management*, vol 1, no. 2, 1974. pp. 164-174.

4. Sources I: Indexing for Management - continued

Cleveland, Harlan, "How Leaders must change in the information age," in The Christian Science Monitor, 16 Feb. 1982. p. 27.

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5. Sources II: Information Theory and Integrative Research

Austin, Thomas S., "Challenges in Meeting Public Needs for Science Information," in Environmental Data Service, U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, Nov., 1977. pp. 3-7.

Cowen, Robert C., "Study: computerized information will remold society," in The Christian Science Monitor, 29 October 1981. p. 4.

Turabian, Kate L., Student's Guide for Writing College Papers, 3rd ed. Chicago: University of Chicago Press, 1973. pp. 3-11, 31-32, 185, 240-241.

RECOMMENDED

Sheehy, Eugene P., Guide to Reference Books, 9th ed. Chicago: American Library Association, 1976.

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6. Sources III: Information Management Models

Schiller, Anita R. and Herbert, "Who Can Own What America Knows?" in The Nation, 17 April 1982. pp. 461-463.

Lord, William B. and Maurice L. Warner, "Aggregates and externalities: Information needs for public natural resource decision-making," in Natural Resources Journal, Vol. 13, January 1973. pp. 107-117.

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7. Information Dissemination I: Communication Theory

Beltran, Luis Ramiro, 'Farewell to Aristotle: 'Horizontal' Communication," for Unesco's International Commission for the Study of Communication Problems, No. 48. Paris: Unesco, 1978.

Ballenger, Bruce, "Planning the PR Campaign: An outline for progressive social change groups," handout for the School of Natural Resources, University of Michigan, circa 1975.

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8. Information Dissemination II: Mass Media

Sandman, Peter M., "Mass Environmental Education: Can the Media do the Job?" in Environmental Education ed. by James A. Swan and William B. Stapp. New York: Wiley, 1974. pp. 207-247.

McLuhan, Marshall, "At the moment of Sputnik the planet became a global theater in which there are no spectators but only actors," in The Journal Of Communication, vol. 24, no. 1 (Winter 1974). (also in Intermedia.)

RECOMMENDED

Witt, William, "Mass Communications," in What Makes Education Environmental? ed. Noel McInnis and Don Albrecht. Washington, DC: Environmental Educators, 1975. pp. 238-266.

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9. Information Dissemination III: Alternative Media

Beecher, Andy, "Madison's Citicable-12 struggles for life while bringing city issues closer to people," in Community Television Review, July 1981. pp. 32-33.

Henny, Leonard, "Theory and Practice in the Social Use of Photo, Film and Video." Monograph issued by the Sociological institute, Utrecht, Holland, 1978.

Cassirer, Henry R., "Rural Development and the Flow of Information." Documents of the International Commission for the Study of Communication Problems, No. 49. Paris: Unesco, circa 1979.

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10. Decision-Making and Effective Communication

Robinson, John P., "Mass Communication and Information Diffusion," in Current Perspectives in Mass Communication Research, ed. F. Gerald Kline. Beverly Hills, CA: Sage Publications, 1972. pp. 71-94.

Young, R.A., "The Relationship Between Information Levels and Environmental Approval: The Wilderness Issue," In Journal of Environmental Education. 11 no. 3. 1980. pp. 25-30.

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11. Information Technology and Futures

Branscomb, Lewis M., "Information: The Ultimate Frontier," in Science, vol 203, 12 January 1979. pp. 143-147.

11. Information Technology and Futures - continued

Goldmark, Peter C., "Tomorrow we will Communicate to our Jobs," in The Futurist, vol. 6, no. 2, April 1972.

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12. International Information Issues

Rogers, Everett M., ed. "Communication and Development: The Passing of the Dominant Paradigm," in Communication and Development: Critical Perspectives. Beverly Hills, CA: Sage Publications, 1976. pp. 121-148.

El-Oteifi, Bamal, "Call for a New International Information Order: Preliminary Remarks." Document from the International Commission for the Study of Communication Problems, no. 33. Paris: Unesco, circa 1976.

RECOMMENDED

Berrigan, Frances J. "Community Communications: the role of community media in development." Reports and Papers on Mass Communication series, no. 90. Paris: Unesco, 1979.

Schramm, Wilbur, Big Media, Little Media: tools and technologies for Instruction. Beverly Hills, CA: Sage Publications, 1977.

Communication and Information Theory - MIDTERM ASSIGNMENT

To help aquaint the student with the tools and agencies used in interdisciplinary research, a 5-6 page bibliography on a topic of their choice is required. The topic may be one of personal interest, for a paper due in another class, or on an issue to be used in the final project of this course.

Sample bibliography themes would be: The State of PBB in Michigan, 1975-1980; a Survey of Survival Plans for Bald Eagles in the U.S.; etc. Copies of previous bibliographies are on reserve at the Integrative Studies Center.

Use Kate L. Turabian's style guide for citations.

Include the following points:

I. A brief statement of your topic to clarify any technical terms or time-frames you have used.

II. A list of useful encyclopedias, special dictionaries, handbooks and guides that provided background to the topic.

III. A list of indexing and abstracting services used. Briefly describe the search terms used in each service and the strengths and weaknesses of each tool.

IV. List 8-10 good articles on your topic. Annotate (summarize) these articles in 2-3 sentences each. (Note that you may have to look up 12-15 articles to find 8 good ones.)

V. List the significant authors, institutions, agencies, conferences, or other outstanding sources on your topic.

VI. A. List the primary materials you have found, such as for statistics, interviews, legal documents, conference proceedings, etc.

B. List any nonprint materials you discovered on your topic, such as slides, video tapes, films, records, photos--items that could be used to assit in graphically presenting the issue in journals, magazines, classrooms, slide shows, or taped presentations.

VII. In one page or less, A. Advise how someone could continue your research and update the issue in the future--what index, journals, people, etc. would be the best sources. B. Make up a research tool or service (ie., special index, journal, professional organization/clearinghouse) that would be useful in organizing the information on your topic.

Important dates:	WEEK 4	Bibliography topic due in class
	WEEK 7	Midterm bibliography due anytime that day of class

Communication and Information Theory - FINAL PROJECT

The final project is an exercise in packaging information. That is, selecting an issue, defininf the user or audience, researching the topic, and creating a product to share with the class. The process of researching and analyzing the information is as much a part of the final project as the presentation. This is an opportunity to show comprehension of the forms of information dissemination, and to that end, we want to keep the possible project ideas as open as possible. Several suggestions for final projects will be offered in class. These projects may be done individually or in small groups.

Each final project will be presented on the last day of class and must have the following elements:

1. A completed information package which can be written, visual, video-taped, or recorded.

2. A written description of your sponsor (real or imagined) that would fund or support and disseminate your package.

3. A written description of the targeted audience and an analysis of the choice of information included in your project.

4. A brief bibliography of sources used to compile the information used in the presentation.

You will have 10-15 minutes for your presentation in class, followed by general discussion. The written part of the project is due the same day.

Important dates for the final projects:

WEEK 8	Make appointments to discuss final project ideas
WEEK 13	Final projects due on the last day of class

[illegible]

American Wilderness Areas

Amy A. Pezo
N.R. 501
Bibliographic Midterm
November 6, 1981

2. The card catalog
3. Environmental Abstracts
4. Reader's Guide to Periodical Literature
5. Union List of Selected Serials in the U. of M. Library

The search terms used for each service were wilderness and conservation. Wilderness contained more listings pertinent to the topic. Aesthetics, ethics, and primitive were relatively useless search terms.

// too general

Browsing shelves has the limitation that you are restricted to a small portion of the library, but eliminates the need for searching the card catalog under various headings. However, the card catalog can be very helpful for locating publications under the same subject scattered in various locations around the library. Environmental Abstracts and Reader's Guide to Periodical Literature are useful for up-to-date occurances, with Environmental Abstracts much more specific to the topic. The draw-back is that they are limited to publications of periodicals.

IV. Annotated Articles and Books

Brockman, Christian F. 1973. Recreational Use of Wild Lands. New York: McGraw-Hill.

> Wilderness is defined as a large unspoiled tract where people can completely escape the confines of the city and obtain the benefits of recreation in truly natural surroundings. A look is taken into the managing, economic, etc. aspects of wilderness areas at various levels of government administration from a recreational viewpoint.

I. Statement of Topic

This bibliography has been compiled to define what American Wilderness Areas are. A look is taken from the legal standpoint, personal statements, case studies, and management considerations.

Ok - this is quite broad

II. Tertiary Sources Providing Background

Information Access Corporation. 1981. Magazine Index. Menlo Park, CA: Information Access Corporation.

Meshenberg, Michael J. 1976. Environmental Planning. Man and the Environment: Information Guide Series. Detroit, MI: Gale Research Company.

National Wildlife Federation. 1981. Conservation Directory. Washington, D.C.: National Wildlife Federation.

Owings, Loren C. 1976. Environmental Values, 1860 - 1972. Man and the Environment: Information Guide Series. Detroit, MI: Gale Research Company.

Webster, A. Merriam. 1953. Webster's New Collegiate Dictionary. Springfield, MA: G. & C. Merriam Co., Publishers.

date + general orientation of this source make it questionable

The two publications of Man and the Environment, Information Guide Series were the most helpful. They provided a condensed listing of useful books and articles. The Magazine Index in the Undergraduate Library could have been more helpful for getting started if it was discovered earlier, but was not fully utilized in preparation of the bibliography.

how specifically?

III. Indexing and Abstracting Services

The indexing and abstracting services utilized were:

1. Browsing shelves

Foreman, David. 1980. BLM's Best Bet. *Outdoor - America* 45: 8-12.

date would be helpful here

The BLM describes wilderness in terms of the wilderness characteristics described in the Wilderness Act: lands that have apparent naturalness and outstanding opportunity for a primitive and unconfined type of recreation or solitude. The BLM used these qualifications in establishing their Wilderness Study Areas across the nation.

Gregory, Bion M. 1978. *Laws Relating to Conservation and Planning*. North Highlands, CA: State of California Department of General Services Documents and Publications Section.

The California Wild and Scenic Rivers Act is defined. The legislature declares that those rivers which possess extraordinary scenic, recreational, fishery, or wildlife values, shall be preserved in their free-flowing state, together with their immediate environments, and that this is a reasonable and beneficial use of water. The stipulations for inclusion as a wild, scenic, or recreational river are provided.

what is State of Ca. relationship to Fed. W&S Rivers Act?

Kilgore, Bruce M. 1964. "Wilderness and the Self-Interest of Man." In *Wildlands in Our Civilization*. ed. by David R. Brower. San Francisco: Sierra Club.

Bruce M. Kilgore says wilderness is the place for safekeeping of the absolute requirement of intelligent tinkering. He puts forth ideas to convince man that he is acting in his own self-interest to preserve himself when he preserves wilderness.

Leopold, Aldo. "Remarks on the Need for Wilderness Conservation." In U.S. National Conference of Outdoor Recreation, 2d. *Proceedings*, 69th Cong., 1st sess., Senate Document, no. 117 (Serial 8549), pp. 61-65. Washington, D.C.: Government Printing Office, 1926.

Aldo Leopold said, "Wilderness is the fundamental recreational resource." He asserted that while the reduction of wilderness has been a good thing, its extermination would be a very bad one. Because wilderness is neither a crop nor renewable, it must be safeguarded.

McCloskey, Maxine E., and Gilligan, James P. eds. 1969. *Wilderness and the Quality of Life*. New York: Sierra Club.

The author never explicitly defines wilderness but implies that wilderness is the way that our founding fathers found the land, be it with or without Indians. He also implies that we would lose a piece of our history without wilderness.

Scoyen, Eivind. 1961. "National Park Wilderness." In *Wilderness: America's Living Heritage*. ed. by David R. Brower. San Francisco: Sierra Club.

Eivind T. Scoyen presents two ways of defining wilderness, the first as an area whose predominant character is the result of the interplay of natural processes, and the second as a quality, defined in terms of personal experience, feelings, or benefits. He then discusses the care, use, and preservation of wilderness in the national parks.

Stegner, Wallace. 1961. "The Wilderness Idea." In *Wilderness: America's Living Heritage*. ed. by David R. Brower. San Francisco: Sierra Club.

In the letter by Wallace Stegner, he argues for wilderness preservation that involves recreation. He speaks of the wilderness idea as something that has helped form one's character and has shaped our history as a people. He proposes that something will be gone out of our spiritual health should the remaining wilderness be destroyed.

Sutton, Ann and Myron. 1974. *Wilderness Areas of North America*. New York: Funk & Wagnalls.

The book gives a fairly thorough listing of nationally operated wilderness areas in North America. In the introduction wilderness is defined in terms of the Wilderness Act. Land managers have used the term "wilderness" in a more restricted sense and the resultant curtailment of freedom in wild places are clearly and simply the result of man's population explosion. ?

increased use of wildland areas?

V & VI. Significant Authors, Institutions, Agencies, Conferences, and Other Sources (including primary materials).

1. The Sierra Club's Annual Wilderness Conferences were extremely useful for semi-condensed information.

2. United States Congressional Committee Hearings

3. Authors:

    a) Brower, David R.
    b) Leopold, Aldo
    c) Olson, Sigurd F.
    d) Owings, Loren C.
    e) Scoyen, Eivind
    f) Stegner, Wallace

these are fairly general + literary — are there any professional or scientific/academic authors noted for their work in this particular area?

4. The National Park Service
   United States Forest Service
   United States Bureau of Land Management

5. Michigan Department of Natural Resources provided a computer printout and other nonpublished materials. They could be helpful for further interests on a more local or narrowed level.

? 6. The American Automobile Association (AAA) provides local and regional ~~un~~published materials. Rand McNally provides information of similar nature on a wider (national) basis.

photographic definition 7. Ansel Adams had numerous photographs scattered throughout many of the publications, especially the Sierra Club Wilderness Conferences.

VII. Summary

The strongest research sources were the Sierra Club Wilderness Conferences and Man and the Environment, Information Guide Series. Publications from the public sector were more difficult to locate than ones from the private sector.

Why were gov't publications — esp. USFS + BLM not more useful?

For research in the future on American Wilderness l/c Areas, one may wish to further consult Man and the Environment, Information Guide Series or the Wilderness

Conferences sponsored by the Sierra Club. Periodicals, especially the Sierra Club Bulletin or Living Wilderness, could lead to recent developments in the area. Mr. Bob Couvreur in the Michigan Department of Natural Resources, Recreational Services Division was extrememly helpful in providing pre ~~non~~published material (computer printouts) on the subject.

A research tool for the future which would be extremely useful in organizing information is an annual report which would include where, who, when, why, and what is going on with respect to America's Wilderness Areas. This could also be extended in retrospect over the past decade. A government agency, such as the National Park Service or U.S. Forest Service, could publish the report, but more likely a private organization would take on the task. Perhaps the Sierra Club, the Audubon Society or Wilderness Society will broaden its services to include such a publication.

2. Nature of Information I: Objectivity/Observables

Here the industry parts company with the environmentalist, who seems to believe that there's no such thing as a good central station power plant.
--"Utility vs EDF," Wall Street Journal, September, 1981

2. Nature of Information I: Objectivity/Observables - OUTLINE

A. OPERATIONAL STATEMENTS - Observables

a. Discuss operational statements reading. What are the limitations/strengths of identifying "observables?" Go over questions to be sure that everyone grasps the meaning of "observable" or proveable or "operational."

b. Small group activity to rewrite 2-3 nonobjective statements from the Unesco Resolution on International Information Order. (Copy of statement follows.) Have groups share rewritten statements. How do these revised resolutions compare to those porposed by the McBride Commission (also on the handout)?

c. Give assignment. Each student is to find five examples each of nonobservable and observable statements in newspapers or environmental literature. They are due in the next class session. (Examples of nonobservable statements follow. If someone is having a hard time locating nonoperational statements, you can advise them to look at the editorial pages of newspapers.)

COMMENTS: "Operational" or "observable" statements are useful in defining problems, setting goals, orienting problem-solving activities and debunking opinions. Such an ability is not a cure-all and this needs to be discussed since there is an initial resentment to removing the "poetry" from writing. Such poetry is important in communications and learning, but may cause problems in making decisions that need to be explained and evaluated.

B. OBJECTIVITY

d. Raise questions of objectivity and the press, starting with the brief readings on objectivity by Michigan Student Assembly and the diverse theories of "free press" presented by Siebert. How possible is it to objectively report an event or issue. What are some of the complaints about objective reporting brought up by less developed countries? (From today's reading, ie., news slant to western values, interests, distortion of news via limited coverage of disasters and unrest.)

e. Stage an in-class "event" such as a skit, and ask students to write a brief description of it as a reporter. Have them read these aloud and compare. Did they accurately portray the event? Do people agree on what happened? Was any dexcription "objective"?

COMMENTS: The skit used in the first class was very humurous and successful. A student from outside of the class pretended that he was the actual instructor and thanked Ron for filling in while he was out of town. Students who knew Ron found the whole thing amusing but many did not remember many details of the skit. New students were more confused. The resulting essays revealed many of the difficulties in "objective" reporting.

C. PROPAGANDA

f. Can provide introduction to topic via Paul Kecskemeti's article, "Propaganda," in the Handbook of Communication, the source of the following quotes:

> Propaganda is the deliberate attempt by some individual or group to form, control or alter the attitudes of other groups by the use of the instruments of communication with the intention that in any given situation the reaction of those so influenced will be that desired by the propagandist. (Qualter, 1962:27)

> Modern propaganda is a consistent, enduring effort to create or shape events to influence the relations of the public to an enterprise, idea or group. (Bernays, 1928:25)

> The idea that propaganda consists of lies (which makes it harmless and even a little ridiculous in the eyes of the public) is still maintained by some specialists...But it is certainly not so. For a long time propagandists have recognized that lying must be avoided. "In propaganda, truth pays off"...Propaganda does not base itself on errors, but on exact facts. It even seems that the more informed public or private opinion is (notice I say 'more' not 'better') the more suceptible it is to propaganda. (Ellul, 1965:113)

> Propaganda feeds, develops, and spreads a system of false claims--lies aimed at the complete transformation of minds, judgments, values and actions and constitute a frame of reference for systematic falsification. (Ibid: 61)

g. Discuss how operational thinking may help in countering propaganda. How do the other views of the press in Siebert's four theories, view propaganda?

h. View a film that discusses and employs examples of propaganda, either Divide and Conquer (Michigan Media no. 8454) by Frank Capra from 1943 or The Life and Times of Rosie the Riviter (also available from Michigan Media), by Connie Field.

Capra's film shows the use of propaganda by Hitler to keep

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northern countries from attacking Germany in WW2; portrays Nazi ceremonies and mass "hysteria"; traces sources of the French disillusionment; and provides an incitement for U.S. to go to war against Germany. One can view just the first reel, about 25 minutes.

Rosie employs U.S. War Department communications film footage that helped coerce women into factories during the war, and then pressured them out of these jobs when the "fighting boys" came back home. Emphasis of film is on the displaced women seen through the eyes of 4-5 "Rosies." This film should be viewed for the entire 60 minutes.

i. Discuss.

READINGS

Hendle, Fred, "Operational Thinking," from Physics 120 course, Ann Arbor: The University of Michigan, .973.

Michigan Student Assembly, "Objective Journalism?" in *Maize*, student newspaper, 10 February 1981.

"The New International Information Order, Who Wants IT? What is It?" New York: UNA-USA, circa 1980. Flyer.

Siebert, Fred S., *et al.*, *Four Theories of the Press*, Freeport, NY: Books for Libraries Press, 1956. p. 6.

RECOMMENDED

Kecskemeti, Paul, "Propaganda," in the *Handbook of Communication*, Ithiel de Sola Pool, *et. al*., eds. Chicago: Rand McNally Publishing Co., 1973. pp. 844-870.

Tatarian, Robert, "News Flow in the Third World: An Overview," in *The Third World and Press Freedom*, ed. by Philip Horton. New York: Praeger Publishers, 1978. pp. 1-54.

SUPPLIES: newsprint, markers, film, projector, extra UNA-USA handouts

2. Nature of Information I: Objectivity/Observables
BIBLIOGRAPHY

In addition to required and recommended readings:

Kampelman, Max M, "The Power of the Press: A Problem for our Democracy," in *Policy Review*, issue 6, Fall 1978. pp. 7-39.

Sarris, Andrew, *The American Cinema Directors and Directions, 1928-1968*. New York: E.P. Dutton, 1968. pp. 87-88. (For background on Capra.)

FILMS

Capra, Frank, *Divide and Conquer*, (Michigan Media no. 8454) 60 minutes, 1943.

Field, Connie, *The Life and Times of Rosie the Riveter*, available from Michigan Media, 60 minutes, 1981.

Communication and Information Theory - Unit 2 handout

USING OPERATIONAL STATEMENTS, OR HOW TO DEBUNK EMPTY RHETORIC

(adapted from Professor Fred Hendle's Physics 120 course taught at the University of Michigan, 1973)

I. Empty Rhetoric--What is it?

A few years ago I attended a series of lectures by a visiting scientist on the philosophy of science at U-M. Many statements were discussed, including:

"Clairvoyance is necessary for science."
"Reality consists of minds of beings and their contents."
"Anything outside the I--conscious--is hypothetical."

In none of these cases did anybody ever mention observables or evidence. HIFO--how I can find out--was notably absent.

Statements like the ones above can be used effectively in poetry and fiction, they can be very useful to convey a mood, to gain votes, or to express a conviction or attitude. However, they are the ones I would call empty rhetoric if they are advanced in a factual context so that they masquerade as facts.

Are all such statements made with the intention to cheat, to mislead, to deceive? Not by a long shot. The scientists in the above examples were hones people speaking from deep convictions. But, as cautioned by Ernest Hemingway, every researcher and reporter "needs a built-in crap detector."

A statement is empty rhetoric when there is no way to find out whether it is true or false. Sometimes we can ask the person who made the statement. If s/he has no idea how to go about finding out, or has not even thought about finding out, we can safely classify the statement as empty rhetoric. When the author is not available, we must try ourselves to find a way and if we cannot even imagine a way to find out we will consider the statement to be empty rhetoric. Thus, in many cases we have to make a judgment before all the evidence is available, but this is true for all decisions in all fields. There is never a guarantee that future evidence will not show that our present evaluation is wrong. If we wait until there is an ironclad case we will never be able to make any decision.

Let us try to set down some ground rules for identifying rhetoric.

There is no clear-cut dividing line between sense and nonsense, but we will try to establish some useful criteria. Below, on our scale from a) to e) we go in the direction of less sense toward nonsense and empty rhetoric.

If we want to find out whether a statement is true or false, we can often put it in one of the following catagories:

a) Good evidence: "The population of the U.S. is 204 million." It would be better to say "according to the 1970 Census, the population...", but clearly this is a statement of fact that can be checked.

b) Weak evidence: "Large doses of vitamin C help in the prevention and cure of the common cold."

c) No evidence, but evidence one way or another could possibly be found: "Sesame seed ice cream cures influenza." Admittedly, this has not been tried but the fact that both cold liquids and sesame seeds are popular in Borneo, where the flu is very rare, makes this statement likely to be true. (Here we gave a caricature of the reasoning behind a statement. To debunk a statement, we must look for evidence that could directly support or prove the sentence.)

d) No evidence and the author of the statement has not give the slightest hint that s/he knows that evidence should be a key point in these assertions: "In our physics course, the students will learn to appreciate the beauty of physics."

e) No evidence. Furthermore, even after trying hard I cannot conceive of a way to gather evidence: "The cause of the high crime rate in the U.S. is a deterioration of the moral fiber of the country."

Let us call the first three statements (a, b, c) operational and mark them with an "O". The next two statements are nonoperational (N) but the last one is so blatant that I would call it rhetoric (R). Arbitrary? Subjective? Certainly. But we will later see that such ideas about causes of crime are misleading and outright dangerous, because they might distract our attention and thus keep us from considering concrete measures to fight crime.

Thus, we can only say, "As far as I am concerned, this statement does not make sense." It is entirely possible that it does make sense to somebody else. If we are afraid to point out nonoperational statements, we will be able to be taken in by hazy statements made either consciously or unconsciously.

Rhetorical statements are widely used and communication without them would be difficult. Usually we don't object to rhetoric. However, in some cases it is to our advantage to do something about it, for example, when we are going to vote, or we are designing project objectives that will need to be evaluated.

II. Summary

Spotting empty rhetoric is easy once you routinely ask, "How can I find out?" On the other hand, rephrasing statements or finding useful relevant causes requires imagination and creativity. It is often very difficult. You lear it only by practicing. The two stages are:

Stage I

a) Identify the method by which we can find the answer to a question.
b) Identify misleading questions and statements.
c) Identify careless rhetoric.
d) Identify causes that are irrelevant, useful, deceitful.

Stage 2

e) Tell how you would go about finding the answer to a question.
f) Rephrase problems, statements, instructions or goals in such a way that they can be approached by experiment or that they can be carried out.
g) Frame a hypothesis and tell how it could be tested.
h) Rephrase or replace causes so that they are relevant.
i) Indicate by what means we could find out whether an alleged cause is in fact important.

Notice that we do not call an honest or dishonest false statement rhetoric: "Boston is the capital of Rhode Island" is only false. However, "Boston has more soul and inner character than any other city in the U.S." is (R).

It is not evidence to the contrary nor the lack of evidence that is characteristic of rhetoric, but the utter lack of a strategy to find evidence; the impossibility to find evidence.

Often statements don't seem to make sense to us but they might be perfectly clear to an expert in the subject. Atoms, extinction, etc. are not directly observable but they are necessary abstractions used in different fields. They are, however, related to observables such as temperature and pressing a bar by a pigeon.

III. Rephrasing or replacing

Here we show how one might rephrase or replace a statement or question so that it can be confirmed, denied or answered.

Non-operational	Operational
Will my cat be happy after it is declawed?	Will my cat's observable behavior change after declawing?
We must uphold the moral integrity of our university	Students caught cheating on exams will be expelled on this campus
Prestige is the power to command admiration	Prestige is the dollar income of a person (!)
The purpose of the university education is to produce a student whose intellect has been cultivated to the maximum.	The law degree conferred by this university is accepted in 32 states
In a deterministic world there is no place for love, free will and creative thought	?
Does the external world exist? Does the universe have a purpose?	?
All space and matter are permeated with an undetectable ethereal substance	The ether cannot be detected. It is therefore a useless idea and should be abandoned. (Einstein)

Note that the operational versions are usually not the equivalent of the non-operational ones, but they refer to observables whereas the non-operational version do not. I cannot directly observe the happiness of my cat but I can observe its behavior, such as purring, rubbing against my shin, etc.

The crucial question in all cases is: "How can I find out--HIFO?" If we cannot think of any way, the question or statement is not operational as far as we are concerned.

Some of our students quickly learn to enjoy debunking--but only when applied to their opponents. This is not a great step forward. Most of us have always been able to see that our opponents use empty rhetoric. The important step is to find the rhetoric in your own statements. This will help you to sharpen your arguments, to base them on facts and experience, to give examples, and to be specific rather than vague.

IV. Warning. Rhetoric is very important in communicating feelings and attitudes. As long as it is used to set the mood it is fine. What we call empty rhetoric, is a conscious attempt to convey the impression that we are talking about facts but cannot give examples of what we mean.

OPERATIONAL STATEMENTS EXERCISE

Please mark the following statements "O" for operational (or proveable) or "N" for non-operational. Rewrite four of the "N" statements to be operational. Remember that the rewritten sentences will have a more limited meaning than the originals.

__1. Surveying the certainty of rapid change we can be like a fallen rider caught in the stirrups--or we can sit high in the saddle, the masters of change, directing it in a course that we choose. R. Nixon, State of the Union Speech, Jan. 72

__2.More people in New York City use the subway to commute than use private cars.

__3. For some time now, the environmental movement has been more narrowly focused than challenges of the future will demand. -The Progressive, Oct. 81.

__4. Somewhere in the dim, dark reaches of the last half century we loosened a crucial grip on control of our lives--the right to determine how much and for what tax money would be extracted from our pockets and emptied into bottomless government coffers. -Ibid.

__5. The present socio-economic system inevitably leads to exploitation and degradation of the environment.-J. Envt.Educ. '74.

__6. The new contract for dockworkers gives them a 14% raise.

__7. News reporting should be factual, fair and without bias. -FCC Television Code

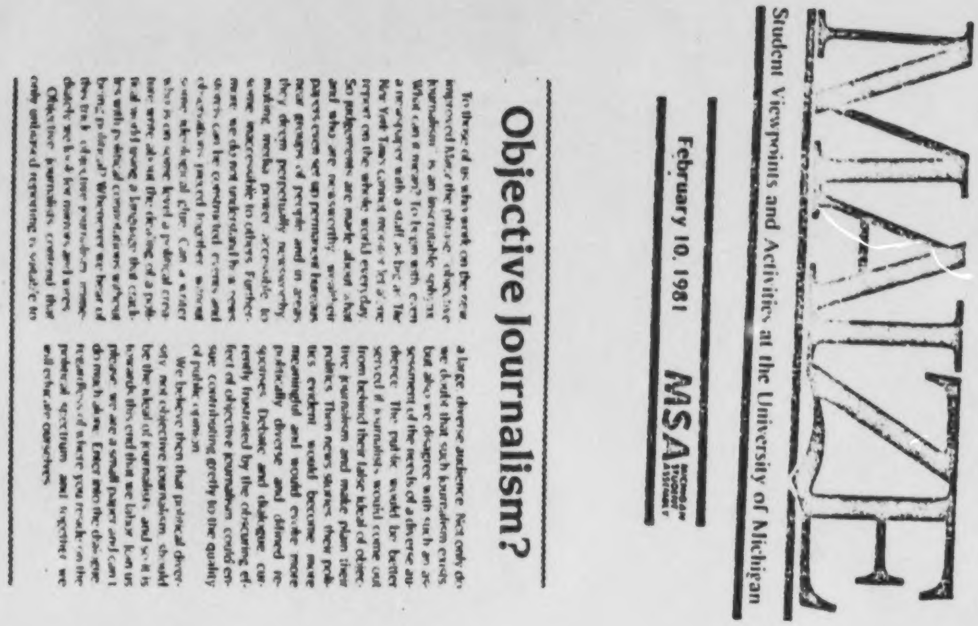
__8. I know of no country in which there is so little true independence of mind and freedom of discussion as in America. -Alexis de Tocqueville, Democracy in America, 1835

__9. There has always been a certain amount of anti-intellectualism in the United States, but now it is focusing in upon science. -Issac Asimov

__10. There was a time when public figures were supposed to be a model for the rest of the country. --Det. Free Press 9-81

__11. Every year the malignant spread of shopping centers and other ugly manifestations of urbanization paves over thousands of acres of productive woodlands, destroying them forever and wreaking unimaginable havoc to habitat, watersheds, and climate. - Outdoor Life, Oct. 81

__12. If the only tool you have is a hammer, you tend to see every problem as a nail. -Abraham Maslow



MAIZE
Student Viewpoints and Activities at the University of Michigan
February 10, 1981
MSA MICHIGAN STUDENT ASSEMBLY

Objective Journalism?

To those of us who work on the new, improved Maize the phrase "objective journalism" is an inscrutable sphynx. What can it mean? To begin with, even a newspaper with a staff as big as The New York Times cannot monitor let alone report on the whole world everyday. So judgements are made about what and who are newsworthy; wealthier papers even set up permanent bureaus near groups of people and in areas they deem perpetually newsworthy, making media power accessible to some, inaccessible to others. Furthermore, we do not understand how news stories can be constructed, events and observations pieced together, without some ideological glue. Can a writer who is on some level a political creature write about the dealing of a political world using a language that crackles with political connotations without being political? Whenever we hear of this trick, objective journalism, immediately we look for mirrors and wires.

Objective journalists contend that only unbiased reporting is suitable to a large, diverse audience. Not only do we doubt that such journalism exists, but also we disagree with such an assessment of the needs of a diverse audience. The public would be better served if journalists would come out from behind their false ideal of objective journalism and make plain their politics. Then news stories, their politics evident, would become more meaningful and would evoke more politically diverse and defined responses. Debate and dialogue, currently frustrated by the obscuring effect of objective journalism, could ensue, contributing greatly to the quality of public opinion.

We believe then that political diversity, not objective journalism, should be the ideal of journalists, and so it is towards this end that we labor. Join us please; we are a small paper and can't do much alone. Enter into the dialogue, regardless of where you reside on the political spectrum, and together we will educate ourselves.

FOUR RATIONALES FOR THE MASS MEDIA Siebert, Four Theories of the Press, 1956.

	AUTHORITARIAN	LIBERTARIAN	SOCIAL RESPONSIBILITY	SOVIET-TOTALITARIAN
Developed	in 16th and 17th century England; widely adopted and still practiced in many places	adopted by England after 1688, and in U.S.; influential elsewhere	in U.S. in the 20th century	in Soviet Union, although some of the same things were done by Nazis and Italians
Out of	philosophy of absolute power of monarch, his government, or both	writings of Milton, Locke, Mill, and general philosophy of rationalism and natural rights	writing of W. E. Hocking, Commission on Freedom of Press, and practitioners; media codes	Marxist-Leninist-Stalinist thought, with mixture of Hegel and 19th century Russian thinking
Chief purpose	to support and advance the policies of the government in power; and to service the state	to inform, entertain, sell — but chiefly to help discover truth, and to check on government	to inform, entertain, sell — but chiefly to raise conflict to the plane of discussion	to contribute to the success and continuance of the Soviet socialist system, and especially to the dictatorship of the party
Who has right to use media?	whoever gets a royal patent or similar permission	anyone with economic means to do so	everyone who has something to say	loyal and orthodox party members
How are media controlled?	government patents, guilds, licensing, sometimes censorship	by "self-righting process of truth" in "free market place of ideas," and by courts	community opinion, consumer action, professional ethics	surveillance and economic or political action of government
What forbidden?	criticism of political machinery and officials in power	defamation, obscenity, indecency, wartime sedition	serious invasion of recognized private rights and vital social interests	criticism of party objectives as distinguished from tactics
Ownership	private or public	chiefly private	private unless government has to take over to insure public service	public
Essential differences from others	instrument for effecting government policy, though not necessarily government owned	instrument for checking on government and meeting other needs of society	media must assume obligation of social responsibility; and if they do not, someone must see that they do	state-owned and closely controlled media existing solely as arm of state

UNA-USA
ISSUES OF THE 80'S

The New International Information Order
Who Wants It? What Is It?

Who Wants It?

Increasingly, during the decade of the 1970s developing countries of the Third World have called for the establishment of a new international information and communications order. Lead notably by Tunisia, they have brought the subject to the agendas of the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Telecommunication Union (ITU), and of the United Nations itself.

What do Third World countries feel is wrong with the present state of affairs? Their representatives assert that the flow of news is presently dominated by four international western-based news agencies: Associated Press, United Press International, Reuters, and Agence France-Press. Developing countries learn about what is going on in the Third World from stories received from New York, London, or Paris. As an Indian journalist, Narinder Aggarwala, point out, the selection, style, content, treatment, and perspective of practically all news flowing in and out of the Third World reflect the profile, preference, and needs of the western media. Further, the critics charge that the news reported from the less developed countries (LDCs) deal preponderantly with disasters, coups d'etat, corruption, and civil wars, while economic and social development problems and progress are rarely reported.

Although some Third World leaders such as Prime Minister Indira Ghandi see in this a sinister plot,* media leaders, both from the Third World and Western countries attribute it to the generally accepted definition of "news being bad rather than good."

The heads of the international news agencies, while conceding that there could be an improvement in the quality of their reporting of events in developing countries, deny the charges, pointing out that there has been an increase in the volume of news from the LDCs and more reporting on economic and social development. This view is generally borne out by a study of the Western news agencies commissioned by UNESCO and carried out by the International Association for Mass Communication Research. The report concluded that news around the world — whether domestic or international — is usually political, but that there was no evidence that any particular part of the world was held up in any unusually favorable light, nor were the LDCs singled out for negative coverage.

Third World spokesmen in their campaign for a new world information order often equate their present position with that of the United States some eighty years ago when a news cartel composed of British Reuters, the French Havas, and the German Wolff agencies, controlled all the news flowing into and out of the United States. Kent Cooper, Manager of Associated Press, who crusaded for breakup of the cartel, described the situation as follows: "So Reuters decided what news was to be sent from America. It told the world about Indians on the warpath in the West . . . The charge for decades was that nothing creditable to America was ever sent. . . ."

Thus Third World countries argue that in the past few years they have been trying to do what the United States did at the beginning of this century: strengthen their news structures by establishing their own national agencies, extend their news circulation and cooperate to overcome difficulties to hear and be heard. Moreover, they assert that under the present system not only the bulk of the news but information generally flows from the Western countries to the LDCs. They see in the massive importation of books, films, and television programs from the West a threat to their cultures and traditional values. Further, they charge that many of the stories sent by the international agencies from Third World capitals reflect, even unconsciously, a Western bias. They argue that Africans should be reporting developments in Africa, that Indians be interpreting events in India. The international news agencies in reply point out that they are constantly increasing the number of nationals in their Third World bureaus and among their local correspondents.

A second reason for the demand for a new international information order is the feeling among the developing nations about the media's presentation of the lack of progress in the establishment of a new international economic order (NIEO). The UN General Assembly in 1974 called for the creation of such a new international economic order because of the widely-shared belief that the world economy presently worked in a way unfair to developing countries and was also increasingly inefficient in its operations. However, in the subsequent meetings both within the United Nations and elsewhere, a stalemate has developed between the Western industrialized nations on the one hand and LDCs on the other.

After more than six years there has been little tangible progress in the establishment of the NIEO.

LDCs conclude that this is due in part to an information "failure." Under a new international information order, they believe that the news from the developing countries would affect public opinion in the West so favorably that the governments of the Western countries would have to negotiate more seriously and intensively on the establishment of an NIEO. Whether indeed this would be the case is arguable but it is a widely held conviction among Third World representatives.

Further complicating the search for a new international information order is the conviction, or at least the suspicion, by a number of Western governments that the Soviet Union and its ideological colleagues will use this reordering of the world's news flow to attempt to increase governmental control over information and to limit free access to news sources. Hence at the present time mere reference to a "new international information order" raises the hackles of many Western journalists who see as implicit the threat of government control of news gathering and news dissemination.

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*In a 1976 speech she asserted, "the media of the powerful countries want to depict the governments of their erstwhile colonies as inept and corrupt and yearning for the good old days. This cannot be attributed to the human failing of nostalgia. To a larger extent, there is a deliberate purpose. . ."

NIIO — What Is It?

What is meant by a new international information order? Even the most ardent advocates of change are somewhat imprecise about what they wish to inaugurate. Their list of grievances is long, but their proposed remedies have yet to be spelled out fully. As Yasushi Akashi, UN Under-Secretary-General for Public Information, put it in a recent address to a Committee of the General Assembly, "Opinions still differ on what exactly a new international information and communications order means. Its precise definition still eludes us."

Perhaps the best description of elements in the new international information order was embodied in a resolution adopted at the UNESCO General Conference in November, 1980. This resolution outlined the following elements:

Unesco Resolution of 1980

(1) elimination of the imbalances which characterize the present situation;
(2) elimination of the negative effects of certain monopolies, public or private, and excessive concentrations;
(3) removal of the internal and external obstacles to a free flow and wider and better-balanced dissemination of information and ideas;
(4) plurality of sources and channels of information;
(5) freedom of press and information;
(6) freedom of journalists and all professionals in the communications media, a freedom inseparable from responsibility;
(7) capacity of developing countries to achieve improvement of their own situations, notably by providing their own equipment, by training their personnel, by improving their infrastructures, and by making their information and communication means suitable to their needs and aspirations;
(8) the sincere will of developed countries to help them attain these objectives;
(9) respect for each people's cultural identity and the right of each nation to inform the world public about its interests, its aspirations, and its social and cultural values;
(10) respect for the right of all peoples to participate in international exchanges of information on the basis of equality, justice, and mutual benefit;
(11) respect for the right of the public, of ethnic and social groups and individuals to have access to information sources and to participate actively on the communication process.

Even with such a comprehensive listing the UNESCO resolution hardly spells out a plan of action for a new international information order. Like many resolutions emerging from UNESCO and other international conferences, it is a compromise compendium which has something which each ideological group can endorse as well as elements which some groups will find objectionable. Western media leaders, for example, will look askance on the implied criticism of international news agencies in the phrase "the negative effects of certain monopolies." Soviet representatives will be uncomfortable with the recommendation automatically endorsed by the Western countries of "freedom of press and information" but the Eastern Europeans will welcome the concept of the "responsibility" of journalists embodied in the sixth recommendation. On the whole, the LDCs appear to be satisfied with the resolution since, if implemented, it will considerably improve their information capacities and correct some of the imbalances which they see in the present system.

It will probably take many additional meetings at UNESCO and elsewhere before a definitive blueprint for the new international information order can be prepared.

Who Is Involved: UNESCO — Center of Controversy

Almost since its establishment in 1946, the United Nations Educational, Scientific and Cultural Organization (UNESCO) has been concerned with questions relating to the flow of information and the improvement of media facilities in the developing countries.

UNESCO's controversial role in the search for a new international information order began, however, in 1976. In that year, the UNESCO General Conference in Nairobi was presented with a "Draft Declaration on Fundamental Principles Concerning the Contribution of the Mass Media to Strengthening Peace and International Understanding, the Promotion of Human Rights and Countering Racialism, *Apartheid*, and Incitement to War." Because of this impossible title, the draft will henceforth be referred to as "The Declaration on the Media."

The draft contained an assertion (Article XII) that "States are responsible for the activities in the international sphere of all mass media under their jurisdiction." This assumption of the right of governmental control over the media was so strongly opposed by Western representatives at the Nairobi meeting that the matter was postponed until the next UNESCO General Conference in 1978. The Conference instructed Amadou-Mahtar M'Bow, the UNESCO Director-General, in the meantime to consult with governments and to present the 1978 meeting with a more generally acceptable text.

As a kind of trade-off for the postponement of the vote on the Declaration, the Nairobi meeting agreed by consensus that a review should be undertaken "of the totality of the problems of communication in modern society." On the basis of this resolution, the UNESCO Director-General appointed an International Commission for the Study of Communications Problems under the chairmanship of Sean MacBride, the former Irish Foreign Minister and winner of both the Nobel and Lenin Peace Prizes. The recommendations of the MacBride Commission were released in the spring of 1980.

The revised "Declaration on the Media" presented to the UNESCO Conference in 1978 still contained references to state control of the media which were unacceptable to the Western delegates. In order to avoid a public confrontation at the Conference, a behind-the-scenes negotiating group which included the Chief US Delegate to the Conference, John E. Reinhardt, as well as delegates from West Germany, Italy, Tunisia, and occasionally Poland, produced a text which was accepted by acclamation. All references to governmental interference in the free flow of news had been eliminated. Throughout the text there were clear statements that interference with the free flow of information was regarded as a violation of a human right. Diversity of sources and means of information were called for, along with the journalist's freedom to report and the fullest possible access to information. Following the adoption of the resolution, a US Department of State spokesman commented that the Declaration "not only is stripped of all language implying state authority over the mass media, but also includes positive language on freedom of information."

Despite the Western "victory" over the text of the Declaration, the episode convinced Western delegates and journalists that UNESCO activities in the field of information must be monitored closely in the future since there was a growing belief that not only among the Member Governments of UNESCO, but in the UNESCO Secretariat itself, there was a predilection toward governmental control of the media. This attitude has colored the acceptance of the MacBride Commission Report and the UNESCO Program for the Development of Communication which came before the General Conference in the autumn of 1980.

The heart of the Commission Report is Section V, which contains the conclusions of the Commission and some 82 specific recommendations. Already these are the subject of intensive debate among media leaders in various parts of the world. For reasons of space only the most important recommendations can be noted here. They are as follows:

a. Censorship or arbitrary control of information should be abolished. (The Soviet member dissented on this recommendation.)

b. All countries should take steps to assure admittance of foreign correspondents and facilitate their collection and transmission of news. Free access to news sources by journalists is an indispensible requirement for accurate, faithful, and balanced reporting. This necessarily requires access to unofficial, as well as official, sources of information; that is, access to the entire spectrum of opinion within any country. (Again a Soviet dissent, since the endorsement of such a recommendation would have meant agreement to the access of Western journalists to Russian dissidents.)

c. The Commission did not propose special privileges to protect journalists in the performance of their duties, although journalism is often a hazardous profession. To propose a licensing system for journalists was dangerous since it would require someone to stipulate who should be entitled to claim such protection. Journalists, the Commission observed, will be fully protected only when everyone's human rights are guaranteed. (The Chairman of the Commission entered a dissenting opinion. Mr. MacBride urged that journalists should be granted a special status and protection.)

d. The Commission condemned the employment of journalists by intelligence agencies of any country.

e. It recommended the establishment of national news agencies in LDCs and, where viable, regional networks.

f. It advocated more news from and about developing countries.

g. Educational and informational use of communications should be given an equal priority with entertainment.

h. Reductions should be sought in the tariffs for news transmissions, telecommunications rates, and air mail charges.

i. UNESCO, in collaboration with the Food and Agriculture Organization (FAO) should take urgent measures to encourage the production of papers and newsprint.

j. Codes of professional ethics for journalists at the national, and in some cases at the professional level are desirable providing that such codes are prepared and adopted by the profession itself — without government interference.

k. To offset the negative effects of inaccurate or malicious reporting of international news, the right of reply and correction should be further considered.

Among the recommendations which aroused the greatest ire among Western media representatives were two which concerned commercial news operations:

l. The Commission believed that in expanding communications systems, preference should be given to noncommercial forms of communication. While acknowledging the need of the media for revenue, the Commission further recommended:

m. That ways and means should be considered to reduce the negative effects that the influence of the market and commercial considerations have in the organization and content of national and international communications flows. (The US Commission member, Elie Abel, vigorously dissented on these recommendations, pointing out that at no time has the Commission seen evidence adduced in support of the nation that the market and commercial considerations necessarily exert a negative effect upon communications flows. "On the contrary," Mr. Abel observed, "the Commission has praised elsewhere in this report courageous investigative journalism of the sort that can be sustained only by independent media whose survival depends upon their acceptance in the marketplace rather than on the favors of political leaders.")

Closely allied to the Commmission's observations on "the negative effects that the influence of the market and commercial considerations" have on national and international news flows, was the recommendation:

n. For the introduction of guidelines with respect to advertising content and the values and attitudes it fosters, in accordance with national standards and practices. Such guidelines, the Commission added, should be consistent with national development policies and efforts to preserve cultural identity.

Some Western observers in reading the MacBride Commission Report found a constant advocacy of pressuring, if not requiring, news media (including the international news agencies) to promote government-established "social, cultural, economic, and political goals." This they charge is the antithesis of the tradition of free press.

Mr. Abel, the US Member of the Commission and a member of the American Delegation to the 1980 UNESCO Conference, in a recent interview (*Editor and Publisher,* November 8, 1980) defended the Report in somewhat measured terms. Pointing out that "we are dealing with a genuine Third World movement to gain control of its future," Abel added that, "At times the Third World decisions are as offensive to the Russians as they are to us — although for different reasons." Commenting that many American press leaders have condemned the Report for not having killed the idea of a new international information order, Abel stated that "The term 'The New International Information Order' is repugnant to all of us. But let's stay involved . . . as attempts to define the concept are made by a UNESCO Committee . . . We should work more actively with international journalists and their organizations capable of influencing their UNESCO delegates. Too often delegates to UNESCO meetings are government officials who know nothing about the press and simply arrive with voting instructions. Finally, we should take a long-range view of UNESCO events and not assume that some nations are enemies forever. Nations change."

One of the recommendations of the UNESCO General Conference of 1978, endorsed by the MacBride Commission, was for the UNESCO Secretariat to draw up proposals for an International Program for the Development of Communication. The UNESCO Director-General submitted to the UNESCO General Conference in 1980 a detailed program to assist developing countries, at their request, in the elaboration and implementation of their information and communications development plans, as well as in the identification of needs and priority areas. The program, to be administrered by a new unit in the UNESCO Secretariat, will be coordinated by an Intergovernmental Council of 35 Member States (to which the United States has been elected). The administrative expenses of the International Program will be paid out of UNESCO's regular budget. The Program will not become operational until sometime in 1981. Principal opposition to the proposal appears to have had two motivations: first, that the program for the development of communications should have a wider base than UNESCO, should involve the International Telecommunication Union (ITU), United Nations Development Program (UNDP), and possibly the United Nations itself; and, second, the lingering suspicion that UNESCO is oriented toward greater governmental control over the use and flow of information. The first report of the Intergovernmental Council on the activities of the Program will be submitted to the UNESCO General Conference in 1982.

ITU: Struggle for the Electronic Spectrum

The International Telecommunication Union (ITU) has become very much involved — on a technical level — with the question of a new international information order.

The oldest of the agencies of the United Nations system, ITU came into being in 1865 when 20 European countries met in Paris to establish the International Telegraph Union. Subsequently, the Agency's mandate was extended to include international telephone services and later other forms of telecommunication.

One of the major functions of the ITU is the convening, every 20 years, of a World Administrative Radio Conference (WARC) to allocate or reallocate telecommunications frequencies. All sectors of the communications spectrum are affected by decisions of the Conference — maritime communications, airline communications, space activities, radio astronomy, radio/TV broadcasting, satellite communications, etc.

When the 1959 World Administrative Radio Conference was held, many LDCs were still dependent territories and others had more pressing problems to worry about than the allocation of the electronic spectrum. This was not the case in the autumn of 1979 when the ITU delegates came together in Geneva to allocate frequencies for the next 20 years — or effectively until the end of the 20th Century. The LDCs let it be known in advance that they were coming to the Conference to demand their fair share of the air waves.

Three areas were particularly contentious. During the early weeks of the Conference, LDCs, at India's urging, requested increasing the communications capacity of INTELSAT, the international satellite organization serving 130 countries, by giving it frequencies now allocated to radar and used by the Western allies for strategic early-warning systems. To block that move, the US threatened to deny economic technical help to INTELSAT. As a result, Western nations got off with a pledge to try to find other frequencies for their radar systems.

A second issue was the request of the United States and a number of other industrialized countries for the allocation of additional frequencies for international broadcasting. Developing countries, relying on the cheap, but technically obsolete, shortwave telephone links for their domestic communications, objected. The Conference did agree to increase broadcasting allocations in part of the shortwave band by 60% but the developing countries called for a further conference sometime in the future to assign the new allocations on an equitable country-by-country basis. The United States and 15 other nations resisted this move on the grounds that there were simply not enough frequencies to go around.

Probably the most explosive issue at the ITU Conference was whether every country should have access to communications satellites. This would entail hanging a "reserved" sign on most, if not all, of the orbital positions still unoccupied by the satellites of the United States and other space powers. Third World representatives argued that by the time a developing nation reached the point when it was ready for satellite communications, it might be frozen out. The country might find that all of the geostationary orbits in the relatively narrow band over the equator had been occupied by the more advanced countries which had gotten there first. For its part, the US resisted the proposal since it could mean that numerous orbits would lie fallow for years or even decades. The upshot was a stalemate. The delegates finally agreed to hold another World Administrative Radio Conference in 1984 dealing solely with this important matter.

Thus in ITU the question of new international information order has reached a confrontational stage.

THE UNITED NATIONS: A Muted Dialogue

The matter of a new international information order came before the United Nations itself in 1978 in a proposal by Tunisia. The General Assembly then adopted a resolution, linking the establishment of a new international information order with the search for a new international economic order. The resolution basically called upon the UN Secretary-General and the UNESCO Director-General to consider ways and means by which assistance to developing countries in the fields of national information and communications systems could be increased. Another part of the resolution was specifically concerned with United Nations public information policies and activities. The Assembly set up a Committee of 41 Member States to study this matter and to report back to the next session of the Assembly.

In 1979 the Assembly again debated the question of a new international information order. It endorsed the proposed UNESCO International Program for the Development of Communication and made the Committee on the United Nations Information Policies and Activities a permanent body, increasing its membership from 41 to 66.

In 1980, the General Assembly expressed satisfaction at the establishment within UNESCO of an International Program for the Development of Communication and agreed to include an item on "Questions Relating to Information" on its 1981 agenda.

Significantly, the acrimony which has characterized some of the debates in UNESCO on the new international information order was not evident in the General Assembly discussions and all resolutions adopted thus far have been approved without a vote. Several Western delegates have expressed reservations concerning some of the specific provisions of the Assembly resolutions.

Afterword

In considering the question of a new international information order, it may be useful to keep the following quotation in mind:

> "The new world information order issue will have to be followed with care and attention. At its worst, a new world information order could mean legitimizing a limitation on the access to news, condoning censorship, placing a restriction on information flow across national borders, and imposing a series of duties, encumbrances, and responsibilities on media outside of their reporting functions.
>
> "At best, it could mean a greater two-way flow of news, films, television programs, books, scientific and cultural information, and closer relations and a better understanding among individuals and nations."

John E. Reinhardt — Director,
US International Communication Agency

3. Nature of Information II: Interpretation

Media tend to reflect the social systems in which the exist, in size, complexity and function.
-W. Porter, Radicalism and the young journalist, Saturday Review, 1971

3. Nature of Information II: Interpretation - OUTLINE

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a. Discuss operational statements assignment. Have students read the non-operational statements aloud and turn them in. Some students may have difficulty identifying "rhetoric" and should be encouraged to keep submitting "N" statements until they have five good examples.

b. View film, Controversy over the Moon (4996 from Michigan Media) 16 min, to see how scientists differ on their interpretations of facts regarding the formation of craters on the moon. How are the same facts used for different conclusions? What is the status of "facts"?

c. Can discuss news coverage of recent environmental issues to show that not only objectivity but also interpretation of events can influence the information that is disseminated. Examples could be: Three Mile Island accident reporting; stories of endangered species; use of the snail darter in the Tellico Dam controversy.

d. Can discuss how one's attitudes can influence how information is treated, and that persuasion techniques are used to convince an audience of a certain interpretation. Can build on readings by Stamm and Bettinghaus.

e. View video tape on "Illinois Power's Response to 60 Minutes," about 25 minutes long. (Available from Illinois Power by written request and accompanied by a blank 3/4 inch video tape.) The company put together a response to charges raised by "60 Minutes" which they feel were unfounded. It is a fascinating presentation to watch and discuss. What is true? What are the facts and how could "60 minutes" been so far off target at times?

f. Talk about midterm project: what is expected what topics are people considering working on, what are the problems. Remind students that topics are due next week.

SUPPLIES: Film, projector, video tape and video equipment

READINGS

Bettinghaus, Erwin P., "Persuasion and Human Interaction," in Persuasive Communication. New York: Holt, Rinehart and Winston, Inc., 1968. pp. 9-24.

Stamm, Keith R., "Environment and Communication," in Current Perspectives in Mass Communication Research ed. F.G. Kline. Beverly Hills, CA: Sage Publications, 1972. pp. 265-295.

3. Nature of Information II: Interpretation
BIBLIOGRAPHY

In addition to required readings:

Lewis, Carolyn, "Three Mile Island," in The Eye of The Storm, ed. by Marvin Barrett and Zachary Sklar. Du Pont-Columbia University Survey of Broadcast Journalism. New York: Lippincott and Crowell, 1980. pp. 108-202.

Smith, Craig R. and Damid M. Hunsaker, The Bases of Argument: Ideas in Conflict. Speech Communication Series. Indianapolis: Bobbs-Merrill, 1972. (for public speaking and debate team training.)

FILMS AND VIDEO

Controversy Over the Moon, Michigan Media no. 4996, 16 min..

"Our Response to 60 Minutes," Illinois Power Company. 25 minutes.

4. Sources I: Indexing for Management

Knowledge is of two kinds. We know a subject ourselves or we know where we can find information on it.

--Boswell, *Life of Johnson*

4. Sources I: Indexing for Managment - OUTLINE

a. Hand out a brief article as ask class members to "index this article so someone else can find it." Any short article will work well. For this example, please refer to "A Dream City, or a Ghost Town?" from *Newsweek*, March 23, 1981.

b. Write on board the terms brought up by students. Cluster them as shown below to facilitate demonstration.

Discussion of index term types	terms on board
TITLE indexing	
Best in scientific reports or artistic essays. Rather useless here. Useful to pick up new terms in field	City, Ghost town
SUBJECT indexing	
generally guided by a thesaurus of limited vocabulary (AKA controlled or fixed terms). Problems that fixed thesaurus is slow to respond to new terms in field. Can have open subject indexing, but in printed indexes, is expensive and unweldy. Can use cross references, also See:	Paolo Soleri Arcosanti (see Architecture) architecture ecology volunteers city (also in title)
KEYWORDS IN TITLE/CONTEXT	
Rotates title around key concepts. Good for new terms. Shows terms in context--amplifies word. Best suited for technical articles.	"Intl. Relations, Systems and history of" (Show wrap around)
AUTHOR indexing	
Useful in the same way as noted for TITLE.	Not applicable here.
SPECIAL LISTS	
Good for highly specialized information or any special purpose.	Chemical compounds (in *Chem Abstracts*--identifies major substances used in experiment.) Also Patent numbers, Author lists, etc.

---

c. Use quote from Chicago Manual of Style on indexers, pp. 404-405, 18.13-16.

d. Considerations for designers of indexes:

> Who is the audience? What information is needed? How frequently issued? How cummulated? How much lag time between issues, and before titles appear? Foreign languages? Special lists? Controlled vocabulary?

e. Consider designing the indexing system needed for the Integrative Studies Center Meehman Archives of environmental journalism.

f. Costs: about $5 for every index citation and $15 for each abstract. Indexers try to limit the indexing terms to thre per entry.

g. Other planning items to consider:

Will your subscribing institutions/libraries have the indexed sources on hand or will you make materials available via microfiche, or photocopies?

Will you include articles from a selected journal list, or try to include everything on a specific topic, no matter where it is located? (Latter policy is followed by several Peace research indexes.) Will you include books? symposium material? government reports?

h. Will you include abstracts? Explain difference. (see glossary).

SAMPLE RANGE OF INDEXES

Biological and Agricultural Index, a cummulative subject index to periodicals in the fields of biology, agriculture, and related sciences. New York: Wilson, 1964- , monthly.

(Same format and company as Readers Guide. Indexes 150 English language periodicals. Controlled vocabulary by subject only.)

Public Affairs Information Service (P.A.I.S.), 1915- Weekly with cummulations five times/year.

(Selected articles in 1,000 english language periodicals. Includes books, documents, pamphlets, reports of private and public agencies. Hierarchical structure of subject within subdivision. Has ordering information for non-journal items.

P.A.I.S. continued

Picks up illusive but significant articles. GREAT source for starting research on policy issues. A timesaver for quick research because it includes private, governmental, and published reports.)

BioAbstracts, Philadelphia: B.A., 1926- , semimonthly.

(5000+ journals from 90 countries. Classified arrangement by organism to facilitate browsing. Titles and most abstracts translated into English. Arranged by BASIC catagories, Biological Abstracts Subjects in Context.)

i. Consider other uses of indexes:
in back of books; in address books; to maps; etc.

j. Indexing concepts in the card catalog. (see handout). "Tracings" are at the bottom of the card and tell what other subject headings the book is filed under. (Books are always filed under author's name, if possible, and so there is no tracing for author--it is a given.)

The subject guide or thesaurus to subject headings in the card catalog is a 2-volume book called Library of Congress Headings.

k. Science Citation Index (SCI), Philadelphia: Institute for Science Information, 1961- , quarterly with annual cummulations.

(Demonstrate how citation indexing works.)

j. Hand out glossary of information management terms.

k. Field trip to the Natural Science Library for a demonstration of on-line data searching with Grace Baysinger.

SUPPLIES: Glossary handouts, sample pages of indexes, Index pages on transparencies, overhead projector Copies of article to index.

READINGS

on next page

READINGS

Miloy, Leatha F., "Coastal and Marine Information Programs," in Coastal Zone Management, vol. 1, no. 2, 1974. pp. 164-174.

Cleveland, Harlan, "How leaders must change in the information age," in The Christian Science Monitor, 16 February 1982. p. 27.

GLOSSARY OF INFORMATION MANAGEMENT TERMS 7/82

Abstract - an index that also has a paragraph explaining the article cited to help determine if the article is what is needed. Abstracts are much more expensive to produce than indexes, but can also be used as a current awareness tool if you skim the abstracts in a certain subject area frequently to keep up on the latest published activity.

Clearinghouse - an institution or company that collects materials on a discipline or subject, organizes them and provides services to the cummulated information. May publish journals, indexes, fact books, offer data bases and provide referral services. Example: ERIC.

Controlled vocabulary - an index with a fixed thesaurus of filing and access terms. This system is useful for clumping similar articles together under fewer search terms, but is not very responsive to new terms.

Current awareness - any service or method that keeps one posted on latest developments in a particular field, for example, a newsletter; a monthly publication that reporduces the contents pages of 30+ journals so you can skim for your area of interest (called Current Contents); or a person who searches, clips and copies articles on a topic for a researcher--a common service in hospital and corporate libraries.

Data base - any collection of information, ie., a library shelf or a desk drawer. To be of value, the data must be organized and accessable.

ERIC - is the Educational Resources Information Center, the model clearinghouse. Provides a range of materials in the education field, including a broadly-conceived area of environmental education. Besides publishing books and guides, ERIC has two fine indexes: on to articles in journals; and one to unpublished, called fugitive, reports and papers. These unpublished papers are made available to all subscriber libraries and users on microfiche.

Hierarchical indexing - classifies materials according to a system of ranking, such as "wildlife management" is a subset of "ecology", or the "Forest Service" is a subset of the Department of Agriculture.

Index - a generally alphabetized list of terms or bibliographic citations that will direct the user to the entire article or quoted passage (as in the end of a book). Indexes often have several parts that can expand upon their usefulness, ie., Chemical Abstracts also lists articles by chemical compounds, and research institutions.

Information service - a general term for any publication, agency, or person that regularly provides formatted information.

Invisable colleges - an informal group of people engaged in research on the same issue, and tend to have ongoing contact with each other to keep posted on current projects. It is a useful network to tap for current, pre-published information and for advice on a specific topic.

Journal - a magazine for a limited, special-subject audience with a majority of space devoted to researched articles.

KWIC - Key Word in Context indexing that indexes the significant words in a research paper's title, with the rest of the title following the indexed word retained. An inexpensive form of indexing.

Microfiche - pronounced micro-feesh, is an approximately 3x5 inch card that may have up to 180 pages of printed matter reduced on it. One needs to use a reader to enlarge the print to read, and xerox copies can be made at the same time. Oten back issues of journals will be kept on fiche to save space in a library. Usefulness of journals over 10 years old drops dramatically in the scientific fields--more recent articles replace the old ones and classic articles are reprinted in collections.

Microfilm - is like fiche only kept on a roll of film instead of on cards. Microfilm works very well for things in alphabetical order, like indexes, or things requiring a larger area, like newspapers.

Monograph - a publication generally longer than an article, but not necessarily a book.

Preprints - copies of an article available before being published by a journal. Often the lag-time from when an article is submitted to when it appears in the journal is 8-12 months.

Primary materials - are the articles, recordings or documents closest to the research or event in a field--research papers lab notes, statistics, interviews of researchers on their work, etc. are examples of primary materials in the scientific fields.

Reprints - copies of an article published by a journal that are available in printed form by themselves.

Scope notes - introduction or preface to a reference work that explains what the tool is designed to do and how it works. It saves time to skim the scope notes before using any reference tool to note short cuts and limitations.

SDI - Selective Dissemination of Information. A research service offered by some libraries to provide an issue-specific current awareness service for a fee.

STI - Scientific and Technical Information.

Search term - a word or phrase used to find your topic in a source. There may be different subject/search terms needed for different indexes, card catalogs, handbooks and guides.

Tracings - a listing of the other terms a book is filed under in the card catalog and is located at the bottom of the card catalog card itself. They are useful for expanding upon useful search terms.

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Desert fantasy: Amid Arcosanti's rusting rods and dangling wiring, 'We just work and try not to regret it'

* A Dream City, Or a Ghost Town?

Ten years ago, visionary architect Paolo Soleri set out to build a city in the Arizona desert. Lying between Phoenix and Flagstaff, **Arcosanti** would marry architecture and ecology in a compact, self-sustaining unit soaring 25 stories high and housing 5,000 people. Today, however, Arcosanti is only 2 per cent finished. And unless additional funding comes through soon, Soleri's "dream city" may end up as a ghost town.

The centerpiece of Soleri's design is a glass-roofed complex for apartments and light industry. Plans also include giant greenhouses that will trap solar heat and provide food for the city. But Soleri tackled some of the auxiliary buildings first. The eight concrete structures completed include a ceramics studio, a restaurant and living quarters for the 50-person permanent staff. Even the buildings that have been standing for several years have a rough, unfinished look: rusting steel rods jut out from the walls, and some of the wiring has been left dangling.

Volunteers: The slow progress can't be blamed on a shortage of labor. Soleri's construction crew consists mainly of college students who shell out $350 each for the privilege of attending a five-week "seminar" that includes nine hours of backbreaking work a day plus occasional discussions with the leader. Over the years, says the Italian-born architect, the volunteers have changed: "They're older than they used to be, a little less out on the fringes of society, more critical and more open."

The architect hasn't been as successful at raising money as he has in attracting followers. Businesses, private foundations and government have all refused to provide substantial support. Soleri raised most of the $2 million spent so far by selling his books, lectures and drawings, as well as bronze bells that the volunteers manufacture on the site. "Money is the limiting factor right now," he concedes. "We are trying to get more people involved, especially in Arizona." Accordingly, he has scheduled a three-day arts festival at Arcosanti in September to mark the project's tenth anniversary.

Tuck Stephenson—Camera 5

Soleri: Visionary

Soleri hasn't bothered to obtain architect's credentials in the United States, and by his own admission has never been commissioned to do a single building—much less a city. Nevertheless, the 62-year-old architect is brimming with confidence. He predicts that Arcosanti will be completed by the year 2000—and that he will live to see it. But the vastness of the task has discouraged many of Soleri's young helpers. "You get tired of people asking you when Arcosanti is going to be completed," complains one volunteer. "We don't think about completion, we don't talk about it. We just work and try not to regret it."

There Is Life After Cronkite

"I'm as interested in talking about Walter Cronkite as I am in jumping off a building," says **Arnold Zenker.** As manager of news programing at CBS in 1967, he substituted for Cronkite when the lately retired anchor man honored a strike by the American Federation of Television and Radio Artists. Some people, says Zenker, "are stupid enough to think that after Cronkite, life has not gone on for me." On the contrary. At 41, Zenker runs his own consulting company in Boston, where he teaches businessmen how to cope with a hard-hitting TV interview.

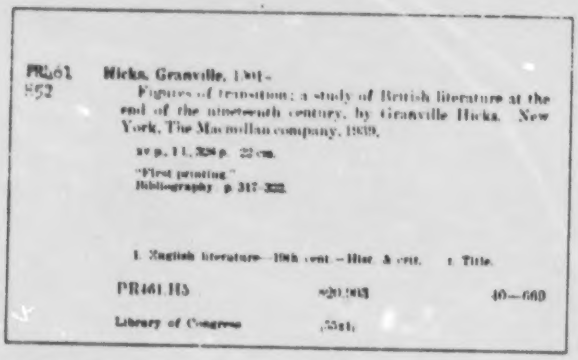
The CBS brass chose Zenker for Cronkite's slot because he "looked calm" when he filled in on a local news spot that morning. The audience took to Zenker. He received 3,000 fan letters, and when AFTRA settled with the networks after thirteen days, Cronkite began his program: "Good evening. This is Walter Cronkite sitting in for Arnold Zenker."

When Zenker returned to his old job, he says he felt like Cinderella after midnight had struck: "I had to find the glass slipper." He found a position as anchor man for the evening news on Boston's WBZ-TV, but left after fifteen months. Without Cronkite's influence, covering news seemed "rather drab," says Zenker. "You had to sit there looking interesting or serious, reading stories." He later spent five years as host of TV talk shows before going into business for himself in 1973.

Nightmares: Arnold Zenker Associates, Inc., does a lot of what Zenker calls "crisis work," helping executives who are under fire from the media or from government investigators. For example, he recently coached the National Funeral Directors Association on how to answer the Federal Trade Commission's tough questions on alleged unfair pricing practices. One technique he uses involves acting out many executives' worst nightmare—being grilled by "60 Minutes" reporter Mike Wallace When Zenker plays the role, he says with a smile, "I get even nastier and more vindictive than Mike Wallace would be." He coaches every detail of the interview with his clients, "right down to when they should stroke their right eyebrow. I tell them: 'I it's good enough for Ronald Reagan, it's good enough for you'."

Zenker says that television stations also hire him to polish up their newscasters' delivery. But he has no desire to return to broadcasting himself. "You couldn't tempt me to go back to that full time," he insists. "I don't like waking up every Monday morning and looking at the ratings to determine if I'm happy that week."

EILEEN KEERDOJA with
PAUL BRINKLEY-ROGERS at Arcosanti and
MARSHA ZABARSKY in Boston



PR461
H52

Hicks, Granville, 1901–
Figures of transition; a study of British literature at the end of the nineteenth century, by Granville Hicks. New York, The Macmillan company, 1939.

xv p., 1 l., 326 p. 22 cm.

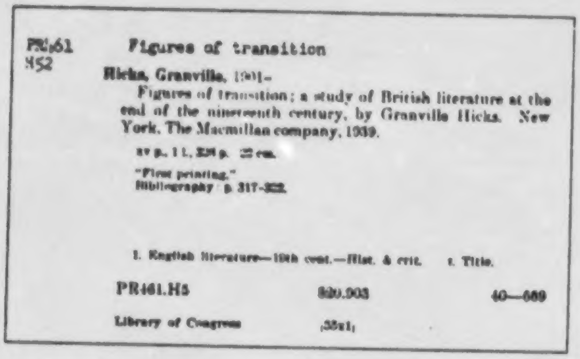
"First printing."
Bibliography: p. 317-322.

1. English literature—19th cent.—Hist. & crit. I. Title.

PR461.H5 820.903 40—669

Library of Congress [35x1]

FIGURE A-1. Author card.



PR461
H52

Figures of transition

Hicks, Granville, 1901–
Figures of transition; a study of British literature at the end of the nineteenth century, by Granville Hicks. New York, The Macmillan company, 1939.

xv p., 1 l., 326 p. 22 cm.

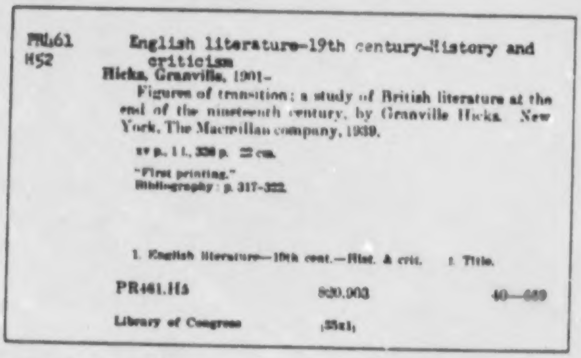
"First printing."
Bibliography: p. 317-322.

1. English literature—19th cent.—Hist. & crit. I. Title.

PR461.H5 820.903 40—669

Library of Congress [35x1]

FIGURE A-2. Title card.



PR461
H52

English literature-19th century-History and criticism

Hicks, Granville, 1901–
Figures of transition; a study of British literature at the end of the nineteenth century, by Granville Hicks. New York, The Macmillan company, 1939.

xv p., 1 l., 326 p. 22 cm.

"First printing."
Bibliography: p. 317-322.

1. English literature—19th cent.—Hist. & crit. I. Title.

PR461.H5 820.903 40—669

Library of Congress [35x1]

FIGURE A-3. Subject card.

How You Can Search Easily and Effectively With SCIENCE CITATION INDEX®

Perform any of four basic types of searches of the literature of science— or combine several types or best results.

1. Citation Search:

Best used when an earlier key author, paper, book or other document relevant to the search subject is known.

Search Requirement:

An investigator is preparing to do research in plate tectonics, a rapidly developing area of geophysics only indirectly related to the researcher's previous geologic work. The researcher is not completely familiar with the literature of plate tectonics, but does know of the work of Xavier Le Pichon and his well known paper on "Sea-Floor Spreading and Continental Drift" which appeared in the *Journal of Geophysical Research* in 1968. He now needs more current information in the field.

Search Technique:

The searcher finds this entry by looking under LEPICHON X in the *Citation Index* section of the *SCI*®.

```
                                                          VOL     PG     YR
              LEPICHON X ......................................................
Cited item ────68 J GEOPHYS RESEARCH    73    3361
               ┌BERGGREN WA   TECTONOPHYS      R     38      11     77
               │JOHNSON RW    BOOK# 00235          1977     101     77
Citing Items ──┤KEHLE RO      BOOK# 00379          1977     412     77
               │SIMMONS G     BOOK# 00088          1977     381     77
               │SOLOMON SC    J GEOPH RES            82     203     77
               └VYSKOCIL P    TECTONOPHYS            38      49     77
```

Authors of six recent papers have cited Le Pichon's 1968 work. Since they have cited the article on plate tectonics, there is a high probability that their papers are relevant to the searcher's interests.

Three of the entries are of authors who cited Le Pichon in recently published books. These items reflect the *SCI*'s coverage of 'non-journal' information — multi-authored books, book series, and published proceedings.

Search Results:

The searcher locates titles of the six papers by looking up the authors' names in the *Source Index*.

```
BERGGREN WA ..........................................................
  HOLLISTE. CD—PLATE TECTONICS AND PALEO-CIRCULATION COM-
  MOTION IN OCEAN
    TECTONOPHYS                38(1-2):11-48     77  R         228R
      WOODS HOLE OCIANOG INST, DEPT GEOL & GEOPHYS, WOODS
        HOLE, MA 02543, USA

JOHNSON RW ...........................................................
  LATE CAINOZOIC VOLCANISM AND PLATE TECTONICS AT SOUTHERN
  MARGIN OF BISMARCK SEA, PAPUA-NEW-GUINEA
    BOOK# 00235                1977:101-116      77              51R
      BUR MINERAL RESOURCES, CANBERRA 2601, ACT, AUSTRALIA

KEHLE RO .............................................................
  ANALYSIS OF GRAVITY SLIDING AND OROGENIC TRANSLATION
    BOOK# 00379                1977:412-434      77              63R
      UNIV TEXAS, DEPT GEOL SCI, AUSTIN TX 78712, USA

SIMMONS G ............................................................
  HEAT AND MASS-TRANSFER IN EARTH—GEOLOGIC ASPECTS
    BOOK# 00088                1977:381-397      77              26R
      MIT, DEPT EARTH & PLANETARY SCI, CAMBRIDGE, MA 02139, USA

SOLOMON SC ...........................................................
  SLEEP NH  JURDY DM—MECHANICAL MODELS FOR ABSOLUTE PLATE
  MOTIONS IN EARLY TERTIARY
    J GEOPH RES                82(2):203-213     77              52R
      MIT, DEPT EARTH & PLANETARY SCI, CAMBRIDGE, MA 02139, USA

VYSKOCIL P ...........................................................
  GLOBAL RECENT CRUSTAL MOVEMENTS AS DETERMINED BY GEO-
  DETIC MEASUREMENTS
    TECTONOPHYS                38(1-2):49-59     77              16R
      RES INST GEODESY TOPOG & CARTOG, CS-15079 PRAHA 5,
        CZECHOSLOVAKIA
```

The searcher can turn to the **List of Books Covered** section of the *Source Index* for complete information on the books:

```
BOOK #
        00088
        FUTURE ENERGY PRODUCTION SYSTEMS, VOL 2
        Future Energy Production-Heat and Mass Transfer Problems,
        1975 International Seminar, Dubrovnik, Yugoslavia, Aug 23-30, 1975.
        Sponsor: International Centre for Heat and Mass Transfer
        Eds: J. C. DENTON, N. H. AFGAN
        Academic Press, New York, 1977, 466 pp., 36 chaps.,
        $38.00 hardbound, LC# 76-10333, ISBN 0-12-210002-6

        00235
        VOLCANISM IN AUSTRALASIA
        Ed: R. W. JOHNSON
        Elsevier Sci Publ Co, Amsterdam, 1977, 405 pp., 29 chaps.,
        $24.50 hardbound, ISBN 0-444-41462-2

        00379
        MECHANICS OF THRUST FAULTS AND DECOLLEMENT
        BENCHMARK PAPERS IN GEOLOGY, VOL. 32
        Ed: B. VOIGHT
        Dowden, Hutchinson & Ross, Stroudsberg, 1977, 471 pp., 30 chaps.,
        $32.00 hardbound, LC# 76-11741, ISBN 0-470-98948-7
```

Highlights of Search:

- Total time of search, including time to note authors names, journal information, and bibliographic data on books was less than twenty minutes.
- The searcher located six items; five seem to fulfill his orig inal search requirements. One of the journal articles (ind cated by the "R" code in the Citation Index and Source In dex entries) is a review paper—an excellent starting point fo background information — with an extensive bibliograph The books located in the search could provide other cha ters of direct interest as well.
- Finally, the searcher has all the information he needs obtain any of the papers described.

2. Permuterm® Search:

Best used to start a search when no earlier authors or rel vant papers on a subject are known. Typical situations wou be background searches for a researcher entering a new fie or a graduate student starting a new project.

Search Requirement:

To obtain recent information on the use of PROPRANOL in the control of HYPERTENSION.

Search Technique:

Under the listing HYPERTENSION in the *Permuterm Subj* *Index* section of the *SCI* the searcher locates the sec search term PROPRANOLOL, and the following entry:

```
HYPERTENSION
  PROPRANOLOL ........AHLQUIST RP
              ........BOSMAN AR
              ........FROHLICH ED
              ........LINDBORG B
              ........MONGEAU JG
              ........MOOKHERJ. S
              ........MROCZEK WJ
              ........POTTER DE
              ........PRICHARD BN
              ........TCHERDAK, P
              ........WALLE T
              ........ZOCCALI C
```

This entry shows that during the period indexed twelve thors have used the terms PROPRANOLOL and HYPERT SION in the titles of their articles. At this point the searc notes the names of the authors and looks them up in *Source Index* for full descriptions of the articles.

4. Sources I: Indexing for Management - BIBLIOGRAPHY

Bearman, Toni Carbo, "Secondary Information Systems and Services," in the *Annual Review of Information Science and Technology*, Carlos A. Cuadra, ed. 13th vol. White Plains, NY: Knowledge Industry Publications, 1978. pp. 179-208.

Berninger, Douglas E. and Burton W. Adkinson, "Interaction between the Public and Private Sectors in National Information Programs," in *ARIS*, 14th vol. White Plains, NY: Knowledge Industry Publications, 1979. pp. 3-29.

Bourne, C.P., *et. al*, "Abstracting and Indexing Rates and Costs: A Literature Review." Minneapolis, MN: ERIC Clearinghouse for Library and Information Sciences, 1970.

Cheney, Frances, *Fundamental Reference Sources*. Chicago: American Library Association, 1971. Chapter on "Bibliographic information, indexes and abstracts," is especially good, but whole volume is worthwhile.

Garfield, Eugene, "Bradford's Law and Related Statistical Patterns," in Current Contents, 19: May 12, 1980. pp. 5-12. (Discribes distribution of articles in indexing services and the law of scattering and redundancy.)

Hayes, Robert M. and Joseph Becker, *Handbook of Data Processing for Libraries*. 2nd ed. Los Angeles: Melville Publishing Co., 1974.

Hyslop, M.R.,"Abstracting cost studies," in *Sci-Tech News*, vol 13, Spring, 1959. pp. 5-6.

Kent, Allen, *et. al*., *Encyclopedia of Library and Information Sciences*. New York: Marcel Dekker. Vol. II, pp. 286-298. (Article on "Indexing" provides background to major styles and formats. Good source for other terms as well.)

Keresztesi, Michael, "Lecture notes from Social Sciences Bibliographies classes." Detroit, MI: Wayne State University, 1977.

Library Literature, 1921- , bimonthly index. New York: Wilson Publishing Co., (Indexes 160 journals for materials on library management. Has much material on indexing and abstracting.)

4. Sources I: Indexing for Management - BIBLIOGRAPHY

McCarn, Davis B., "Online System-Techniques and Services," in Annual Review of Information Science and Technology, 13th vol. White Plains, NY: Knowledge Industry Publications, 1978.

National Academy of Sciences and the National Academy of Engineering, Scientific and Technical Communication: a pressing national problem and recommendations for its solution. Washington, DC: National Academy of Science, 1969. (Entire volume is very useful for course, but chapter on "Basic access service-document availability, bibliographic control, abstracting and indexing," is appropriate for this session.)

U.S. General Accounting Office. Report to Congress. "Millions Wasted trying to Develop Major Energy Information System." 15 May 1981. AFM-81-35. pp. 1-35. (Uses systems approach to debunk data management problems.)

Weinstock, Melvin, "Citation Indexes," in Encyclopedia of Library and Information Science, vol 5. New York: Marcell Dekker, pp. 16-40.

Wellisch, Hans H., Indexing and Abstracting, An International Bibliography. Santa Barbara, CA: ABC Clio, 1980.

5. Sources II: Information Theory and Integrative Research

They (the Americans) have all a lively faith in the perfectability of man, they judge that the diffusion of knowledge must necessarily be advantageous, and the consequences of ignorance fatal...
--Alexis de Tocqueville, Democracy in America, 1835

5. Sources II: Information Theory and Integrative Research

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a. Midterm bibliography topic is due in class today. Discuss proposed topics.

b. Use handout on "Flow of Research Information." Notice the activities involved in research that occur before an article is published in a journal. Use glossary of terms from unit 3 to help clarify such access points as invisible colleges, and current awareness services.
Note the involvement of a professional association to help organize conferences and publish articles. (Many of the interdisciplinary environmental concerns lack these professional groups and so the information is spread into a diverse number of journals, symposia, and later find their way into different indexes which makes retrieving interdisciplinary articles more difficult. Trace the path of a forest products article, through a Society of American Forester's symposium, into American Forest journal and indexed by the Forest Service as well as by Biological Abstracts. Compare this path with a research article on "conflict mediation" which could be placed in political science, sociology, communication, as well as in the specific field in which the conflict arises. A society or research institution (U-M's Conflict Mediation Center) can ehlp coordinate and disseminate research on a specific area.

c. The flow of scientific information from the research stage through publication and incorporation into a body of knowledge is a microcosm of the evolution of a new field into a recognized filed of its own.

d. Use the handout ofrom the National Academy of Sciences and the "Flow of Literature Organization" to portray points of access to information for the researcher.

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e. Look at the flow of information from the perspective of three disciplines: Humanities, Social Science, and Science-Technical (H, SS, ST). Hand out bland chart and fill in the primary and secondary information types. Primary sources are the closest to the subject and are the most "objective" and "operational" materials. They are useful as the "facts" of research. Secondary materials at the first level make the primary materials more popular, and also help organize the information via indexes, catalogs, dictionaries and encyclopedias.

f. Use search strategy handout. Notice how different tools help orient the researcher, supply materials, and can be quick fact-locaters.

g. Demonstrate the usefulness of guides by bringing in a few samples from the ISC library.

h. Analyze a search question on the board to show how to break down a topic into smaller segments (4Ws: who, what, where, why) to better select the most appropriate topic and also to determine the various aspects of an issue (useful for problem analysis).

i. Use small group exercises to analyses different topics such as hazardous wasts; appropriate technology, strip mining, national park development.

j. Review the differences between a bibliography and footnotes and how to use Ibid. and op. cit.

SUPPLIES: newsprint and markers, handouts, sample guides

READINGS

Austin, Thomas S., "Challenges in Meeting Public Needs for Science Information," in Environmental Data Service, November, 1977. pp. 3-7.

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Armour, Richard, "How to find it: Basics of Research," reprinted from *The Christian Science Monitor*, September, 1979.

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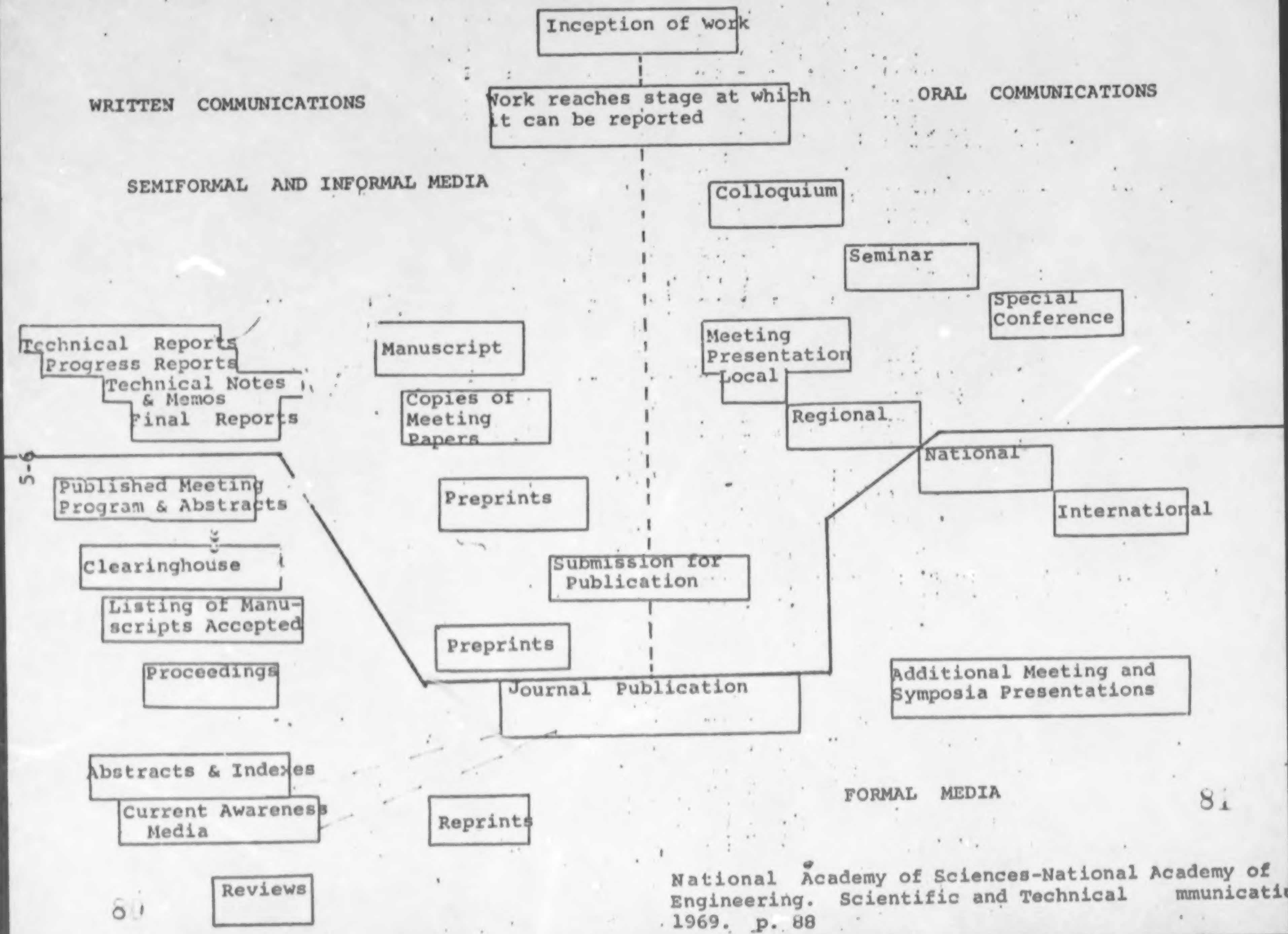
FLOW OF RESEARCH INFORMATION

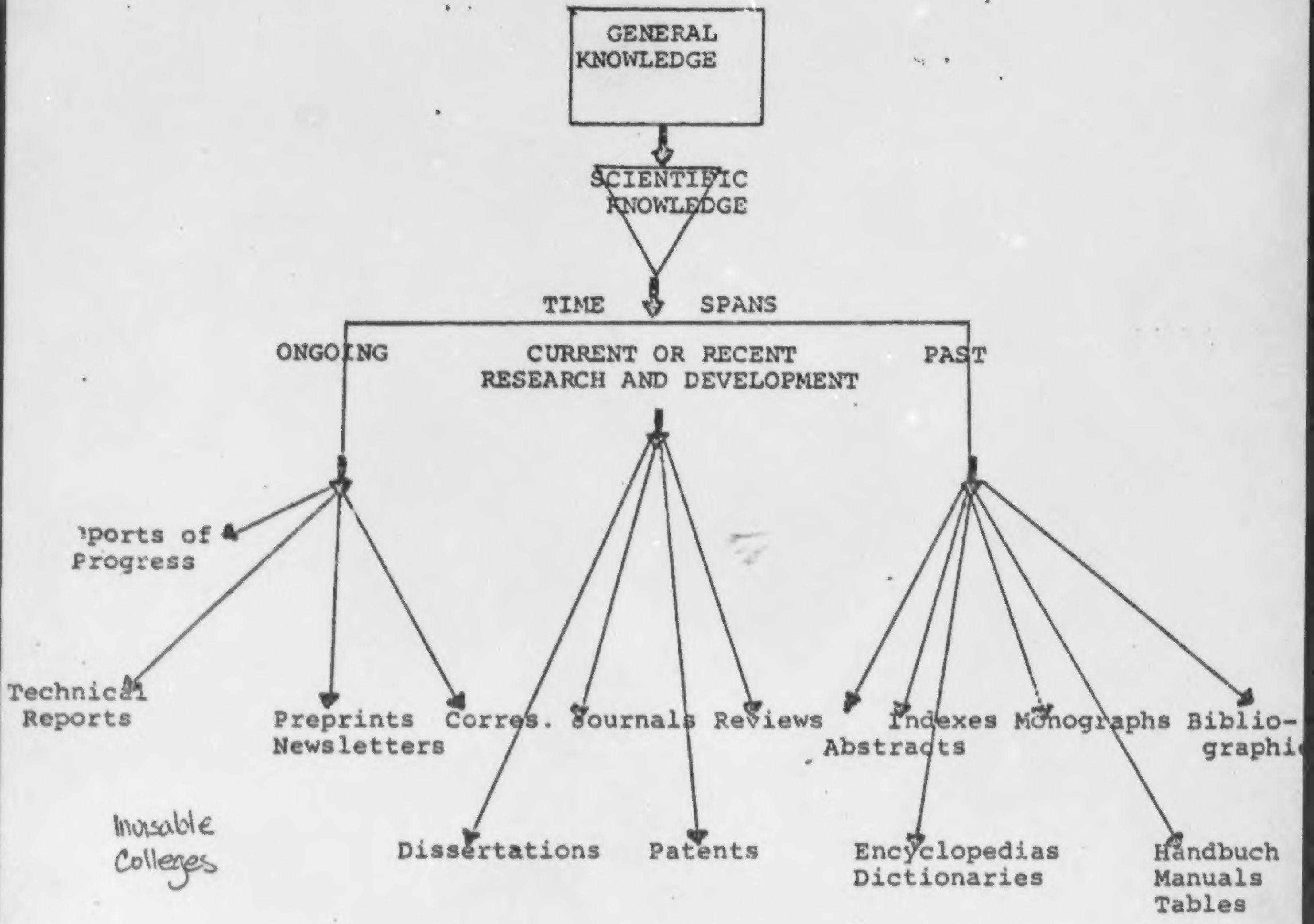
Oral	Written	Comments
Research		
	grant applications	
invisible colleges		access by indexes to grant applications
Conferences	Proceedings	Professional assocition may sponsor conferences, journals and indexes
results from research	manuscript	
	article in journal	Problem with "new interdisciplinary" work: many indexes, journals, search terms must be used. It is more difficult.
	Current Awareness Services	
	indexed and abstracted	
	quoted in other articles	Citation indexing helps
	Compiled into book or text	
	improved upon by later articles	

MEDIA USED FOR THE DISSEMINATION OF INFORMATION FROM INCEPTION OF WORK TO FORMAL PUBLICATION


Inception of work
Work reaches stage at which it can be reported
WRITTEN COMMUNICATIONS
ORAL COMMUNICATIONS
SEMIFORMAL AND INFORMAL MEDIA
Colloquium
Seminar
Special Conference
Technical Reports
Progress Reports
Technical Notes & Memos
Final Reports
Manuscript
Copies of Meeting Papers
Meeting Presentation
Local
Regional
National
International
Published Meeting Program & Abstracts
Preprints
Clearinghouse
Submission for Publication
Listing of Manuscripts Accepted
Preprints
Proceedings
Journal Publication
Additional Meeting and Symposia Presentations
Abstracts & Indexes
Current Awareness Media
Reprints
FORMAL MEDIA
Reviews

National Academy of Sciences-National Academy of Engineering. Scientific and Technical mmunicati 1969. p. 88

FLOW OF LITERATURE ORGANIZATION


GENERAL KNOWLEDGE
SCIENTIFIC KNOWLEDGE
TIME SPANS
ONGOING
CURRENT OR RECENT RESEARCH AND DEVELOPMENT
PAST
ports of Progress
Technical Reports
Preprints Newsletters
Corres.
Journals
Reviews
Indexes
Abstracts
Monographs
Biblio- graphi
Invisable Colleges
Dissertations
Patents
Encyclopedias Dictionaries
Handbuch Manuals Tables

by Joanne Goza

OVERVIEW OF THREE MAJOR DISCIPLINES*

"Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information on it."--S.Johnson

	HUMANITIES	SOCIAL SCIENCES	SCI-TECH
	Philosophy, Arts, Religion Music, Theater Literature...	Education, Myths Sociology, Anthro. Folklore, Econ. Law, Poli. Sci. Geography	Biology, Chem. Earth Sciences Psychology, Math Engineering, Medicine, Physics Agriculture
PRIMARY	poem, score, play photos, film painting, novel	myths, theories laws, maps, case studies, interviews, research articles	experiments fieldwork observations articles
SECONDARY	criticism reviews biographies	discussion features cartoons	popular articles in press or magazines, alluding to research but not giving entire experiment.

———encyclopedias, dictionaries———
indexes, bibliographies, handbooks, guides**

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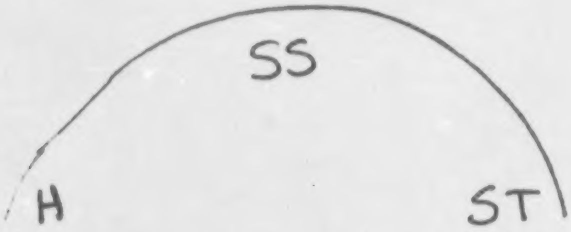
*catagories derived from Sheehy's Guide to Reference Books

**guides can direct you to other sources in a field--very helpful



Social Sciences share primary materials and research methods with both the humanities and science.

A SEARCH STRATEGY FOR LOCATING LIBRARY MATERIALS

USE	WHAT	EXAMPLE
for background, starting out	Encyclopedia article on topic (Also Dictionary is useful) (helps define question, get search terms and notable authors in bibliography)	World Book Encypedia (general) McGraw-Hill Encyclopedia of Environmental Science (specific)
for books	Card Catalog (look under appropriate subject terms and authors) Browse on shelves where similar books are located. Use Bibliographies.	
for articles	Indexes and abstracts to magazines, newspapers, and journals (look under subject terms or authors for more recent information) Use bibliographies from other articles to locate additional material (the research fishnet effect)	Reader's Guide to Periodical Literature (general) Environment Abstracts (700 publications) Selected Water Resources Abstracts Science Citation Index
for organizations, agencies, experts	Directories for addresses and Purposes. Biographical Dictionaries for people.	Recreation and Outdoor Life Directory Conservation Directory by the National Wildlife Federation
for facts, statistics, places	Handbooks provide statistics, events, formulas, allusions. Gazetteer and atlas sources are best for locations, descriptions, and distances.	Famous First Facts Handbook of Chemistry
for trends in a field	Yearbooks give current events, past year's developments, recent happenings, literature review.	Yearbook of the Social Sciences Annual Review of Information Systems and Sciences
for illustrations, media	Directories of A-V materials, indexes of media, pictures, cartoons, films, recordings, slides.	Catalog of Museum Publications and Media
for other materials	Ask Librarian, instructor, expert.	Organizational files, oral histories
to help select tools	Handbooks and guides to the specific area (to select indexes and encyclopedias)	Sheehy's Guide to Reference Books (general) Environmental Planning Guide

ANALYZING A SEARCH QUESTION WITH FOUR W's: WHO, WHAT, WHERE WHEN

Purpose: to establish parameters for research to be able to select a manageable sized research question, not too small or large, and to consider what sorts of primary materials will enhance the theory being advanced.

experiments with animals
effects on population/crops/labor
who

AIR POLLUTION

what	where	when
which components: acid rain, CO auto exhaust define measurements	U.S., Germany one state 1 industry (ie., coal) compare 2 cities 1 city etc.	1982 (problems finding very recent material) future 1970s compare 2 times 1880s etc.

Disciplines that may be involved

Public Health, Medicine
Climatology, Environmental Pollution,
Law, Urban Planning, Labor,
Agriculture, etc.

Agencies with primary materials

U.S. government, EPA, city records, professional organizations meteorologists

Materials needed

sampling statistics, articles, area survey, EIS, industry reports, health reprts conferences, etc.

NR 501 Information Theory and Management, Fall 1981

TAKE HOME ASSIGNMENT #2 Due next Tuesday, Oct. 13th

The purpose of this assignment is to help aquaint the student with reference source types and individual formats. The first few questions (1-6) refer to specific works at the Natural Science Library in the reference section (same as level "C" or the yellow section). Please replace these works on the shelves when you're through to help the next person locate them more easily. The remaining questions ask you only to identify a reference type as outlined on today's handout, that would probably contain the information needed to answer the specific question.

1. In the 1980 volume of the Statistical Abstract of the U.S. (SD 11 .C34), locate the appropriate chart and fill in the following blanks:
No.of farms in U.S. in 1964 ____________ and in 1978 ____________
The total dollar value of land in the fams in the U.S. in 1964 ____________
and in 1978 ____________.
Compare the adverage acreage per farm in the U.S. in 1964 ____________
to 1978 ____________.

2. Using recent copies of Environment Abstracts (Z7164 .N2 E62B) locate an article on the Three Mile Island nuclear power plant accident. *(Hint: "Nuclear..." is a good search term, and you may have to look into a couple issues to locate an appropriate article. There are many "correct" answers.)* Give article number, article title and author. ____________

3&4. In A Thesaurus of Land Use and Resource Management Terminology (Z 695.1 .L29 T42) what does "NT" stand for? ____________ When would you want to use a "NT" word; how would it be useful? ____________

5. Dangerous Properties of Industrial Materials by N. Irving Sax (T 55.3 .H3 S27) is a *handbook*. Briefly explain what is the difference between the contents of the tan and white sections of the book. ____________

6. Using Science and Engineering Literature (Z 7401 .M25), a *guide*, look under the "Environmental Sciences" section and select a source that might be helpful to you on your midterm bibliography. Write it below. *(If this section is not applicable to your topic, answer; what source would you select to help you work on the topic "endangered species"?)* Give source book title and author.

____

The next set of questions do not ask for specific answers. Just imagine that you have the following information needs and imagine what kind of source (eg., encyclopedia, index, gazetteer) you would like to have to most easily find the answer. There may be more than one correct answer.

7. You'd like to contact an organization dealing with the oil refinery industry. You'd try looking for a ____________.

Take home assignment 2 continued

8. A good friend asked you to tape her physics class lecture while she's out sick. Two hours before the class, you realize the tape recorder doesn't work and you decide to take notes instead. The topic is on "thermodynamics" and you have a half hour to get a little background on the subject in the library so that you can better decipher the lecture. What source would you turn to?

____

9. You have one great article from a journal on the exact topic of your paper. How can you easily collect additional materials on the subject from that one article?____

10. For a seminar class in Resource Managment, you volunteered to offer the first discussion topic on wastewater management, an area that you know very little about. After reading an encyclopedia article to help orient you to the field, you now hope that a(n) _________________________ exists to direct you to other materials.

10. On the job now, you've been asked to provide a background introduction to the brand new field of "oilglbucol" a branch of geology, for a planning meeting three days away. No one in your department, yourself included, has ever hear of it. Where might you turn?_____________________________

11. You need an article on Smokey the Bear. You know that Ranger Rick's Magazine often features Smokey, but all the magazines are in storage. You have to ask for a specific issue. How would you find one?__________________

Alternative exercise:

Skim through several professional environmental journals and select three that would provide you with current awareness materials in your field of interest. Why did you select these titles?

Check to see if any of these journals are issued by a professional organization. Look up the organization in the Encyclopedia of Associations. What other services does this organization provide to members? Conferences? other publications? job placement services? referral service? data bases? research? other?

6. Sources III: Information Management Models

The nut that is easy to crack is often empty.
--Charlie Chan, Murder Over New York

6. Sources III: Information Management Models - OUTLINE

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a. U.S. Government publications overview: Grace North, chief documents librarian from U-M's Graduate Library can join the class to help present the basic documents collection and answer questions.

b. An overview of government publishing activity is illustrated on the accompanying handout. Of special use are the flagged areas, explained below:

(A) The Government Printing Office and the Superintendent of Documents (SuDocs) are responsible for organizing the government documents.

(B) The Monthly Catalog is issued by SuDocs to help index the printed material and is organized by issuing agencies and assession number (c and e) as determined by a standard code, ie., A13.1 for a Forest Service annual report (e). The Monthly Catalog also has other indexes to help locate materials by title, author and subject (d).

(1) The U.S. Government Manual is the main who's what in government. It is updated frequently.

(2) The Library of Congress was established to be a reference source for Congress and has become a national catalog of just about every book published in the U.S. as well as including many foreign titles. An ongoing listing of these huge holdings is called the National Union Catalog, or NUC (3). Within the NUC listings are abbreviations to selected libraries that carry a specific work and through the Library of Congress' (LC) Interlibrary Loan (ILL) system, you can borrow that book from another library if your own local library doesn't have the title. You are never far from a research facility when you have access to NUC/ILL.

LC also coordinates the U.S. participation in the International Standard Book Number (ISBN) (5) which gives a unique number to every material listed in the NUC which you can use to order that book anywhere in the world. (There's also an ISSN for serials/journals.)

6. Sources III: Information Management Models - OUTLINE

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(6) The Congressional Information Service is a private company that coordinates, indexes, abstracts, and provides microfiche for most activities occuring in Congress.

(7) Initials stand for Bureau of Indian Affairs, Fish and Wildlife Service, National Park Service, Bureau of Land Management.

(8) Note that the Forest Service is under Agriculture.

(9) National Technical Information Service is another private company that indexes much of the scientific research funded by government. Often these reports are not listed in the Monthly Catalog. See Anita Schiller's article on "Who can/own what America Knows?" in the April 17, 1982 issue of the Nation for a discussion of some of the problems that NTIS poses.

(10) Government Reports Announcements is a source for locating current research projects before formal reports are issued. Also lists grant proposals for on-going projects.

(11) Environmental Protection Agency provides indexes and abstracts as well as reports for many of its research projects. See handout for pre-Reagan administration profile of the EPA.

c. Possible questions for Grace North:

Where are government documents located at U-M?
(they were recently moved around)
How can one get a copy of a document after locating the SuDoc number in the Monthly Catalog?
Ditto for a NTIS article
How does one follow a bill through Congress?
What are good sources for environmental information?
How have the Reagan cutbacks affected the document collection at U-M?

d. Discuss midterm topics to get advice from Grace on techniques and sources that might be helpful.

6. Sources III: Information Management Models - OUTLINE

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e. Discuss sources to nonprint materials such as to films, slides, etc., NICEM or LC/EPA photo collections.

f. Field trip to ERIC Clearinghouse on Counseling and Personal Services at 2108 School of Education Building to see a successful model of information collection and dissemination.

g. Other sources listed in the bibliography may be demonstrated. The Forest Service's data management controls are excellent.

6. Sources III: Information Management Models

BIBLIOGRAPHY

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Andriot, John L., *Guide to U.S. Government Publications*. McLean, VA: Documents Index, 1978.

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Deschene, Wallace A., *User's Manual: RID-POLY, Geographic Information System*. U.S. Dept. of Agriculture. Forest Service. Intermountain and range experiment station. General technical report INT-105. May, 1981. (Explains a computer assisted mapping service to trace and help manage resources.)

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Freeman, James E., and Ruth M. Katz, "Information Marketing," in *Annual Review of Information Science and Technology*, vol. 13. White Plains, NY: Knowledge Industry Publications, 1978. pp. 37-59.

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6. Sources III: Information Management Models - BIBLIOGRAPHY continued

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Moorehead, Joseph, Introduction to U.S. Public Documents. Littleton, CO: Libraries Unlimited, 1975.

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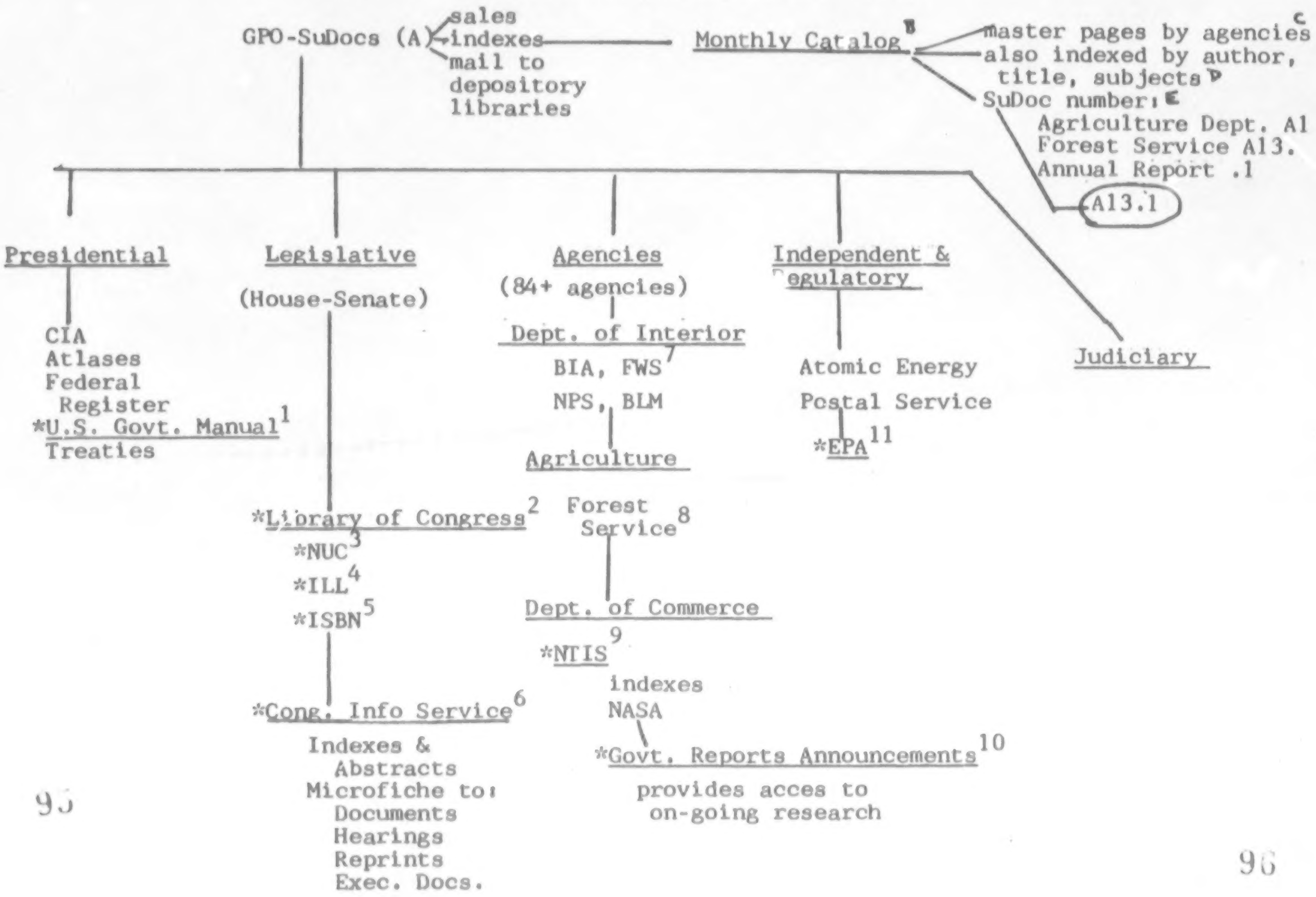
U.S. Department of Justice, Office of Information Law and Policy,, "Your right to Federal Records, Questions and answers on the Freedom of Information Act and the Privacy Act," booklet, January, 1981.

U.S. General Accounting Office, Report to the Chairman Committee on Government Operations House of Representatives, "Department of Agriculture needs Leadership in Managing its Information Resources." CED-81-116. 19 June 1981.

CHART TO SELECTED GOVERNMENT AGENCIES 8/82



GPO-SuDocs (A)
- sales
- indexes — Monthly Catalog[B]
  - master pages by agencies[C]
  - also indexed by author, title, subjects[D]
  - SuDoc number:[E]
    Agriculture Dept. A1
    Forest Service A13.
    Annual Report .1
    A13.1

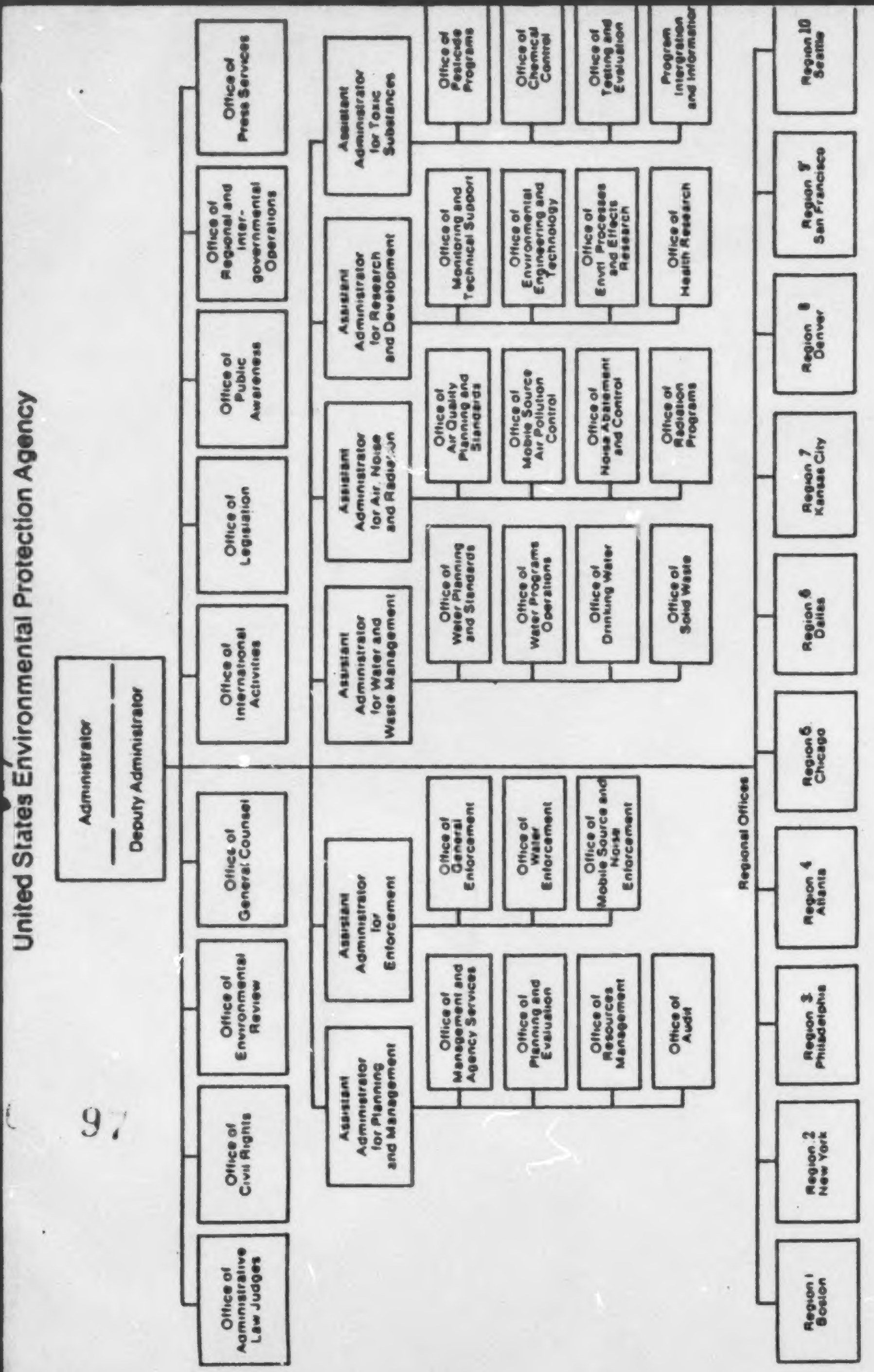
Presidential
- CIA
- Atlases
- Federal Register
- *U.S. Govt. Manual[1]
- Treaties

Legislative
(House-Senate)
- *Library of Congress[2]
  - *NUC[3]
  - *ILL[4]
  - *ISBN[5]
- *Cong. Info Service[6]
  - Indexes & Abstracts
  - Microfiche to:
    Documents
    Hearings
    Reprints
    Exec. Docs.

Agencies
(84+ agencies)
- Dept. of Interior
  - BIA, FWS[7]
  - NPS, BLM
- Agriculture
  - Forest Service[8]
- Dept. of Commerce
  - *NTIS[9]
    indexes
    NASA
  - *Govt. Reports Announcements[10]
    provides acces to on-going research

Independent & Regulatory
- Atomic Energy
- Postal Service
- *EPA[11]

Judiciary


United States Environmental Protection Agency
Administrator
Deputy Administrator
Office of Administrative Law Judges
Office of Civil Rights
Office of Environmental Review
Office of General Counsel
Office of International Activities
Office of Legislation
Office of Public Awareness
Office of Regional and Inter-governmental Operations
Office of Press Services
Assistant Administrator for Planning and Management
Office of Management and Agency Services
Office of Planning and Evaluation
Office of Resources Management
Office of Audit
Assistant Administrator for Enforcement
Office of General Enforcement
Office of Water Enforcement
Office of Mobile Source and Noise Enforcement
Assistant Administrator for Water and Waste Management
Office of Water Planning and Standards
Office of Water Programs Operations
Office of Drinking Water
Office of Solid Waste
Assistant Administrator for Air, Noise and Radiation
Office of Air Quality Planning and Standards
Office of Mobile Source Air Pollution Control
Office of Noise Abatement and Control
Office of Radiation Programs
Assistant Administrator for Research and Development
Office of Monitoring and Technical Support
Office of Environmental Engineering and Technology
Office of Envtl Processes and Effects Research
Office of Health Research
Assistant Administrator for Toxic Substances
Office of Pesticide Programs
Office of Chemical Control
Office of Testing and Evaluation
Program Integration and Information
Regional Offices
Region I Boston
Region 2 New York
Region 3 Philadelphia
Region 4 Atlanta
Region 5 Chicago
Region 6 Dallas
Region 7 Kansas City
Region 8 Denver
Region 9 San Francisco
Region 10 Seattle

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Air, Land Use 14
Air, Pollution Technical Information Center (APTIC) 14
Air Programs 14
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Appointments, Deputy Administrator's 3
Audit (Personnel) 9
Automobile—see Motor Vehicle
Budget Operations 10
Citizen Information .... back cover
Civil Rights 4
Community Development 6
Congressional Affairs 4
Congressional Record (Digests) 4
Congressional Reports 4
Consumer Complaints .... back cover
Contract Management 11
Correspondence, Congressional 4
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Data Analysis, Air Quality 15
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Enforcement, Noise 12
Enforcement, Pesticides 12
Enforcement, Solid Waste 11
Enforcement, Stationary Sources 11
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Environmental Review 5
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Eutrophication 13
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General Counsel 6
Grants Administration 10
Grants, Legal Aspects 6
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Hazardous Waste Disposal 14
Hazardous Waste Management 14
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Industrial Discharges, Abatement and Control .. 12
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International Ocean Affairs 5
International Technology 5
International Visitor and Information Exchange. 5
Land Use, Air 14
Land Use, Radiation 15
Legal Support, Enforcement 11
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Legislation, Policies and Programs 4
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Libraries, Regions 23
Local Government 3
Mailing List, General .... inside back cover
Mailing Lists, Technical .... inside back cover
Management, Services 10
Mobile Source Air Pollution Control 15
Mobile Source Enforcement 12
Monitoring, Air Quality 15
Monitoring, Water Quality 12
Motion Pictures, Public Awareness 7
Motor Vehicles, Certification 15
Motor Vehicles, Emission Standards 15
Motor Vehicles, Import Regulations 15
Municipal Construction 13
Municipal Solid Waste Disposal 14
Municipal Wastewater Systems 13
Noise, Enforcement 12
Noise Programs 16
Non-Point Source Control, Water Quality 12
Ocean Affairs, International 5
Oil and Special Materials Control 13
Oil Spills 13
Permit Programs 11
Personnel Management 10
Pesticides, Hazard Evaluation 22
Pesticides, Enforcement 12
Pesticides Programs 22
Pesticide Registration 22
Photographs Distribution 7
Planning and Management 9
Policy Planning 10
President's Youth Awards Program 7
Press Services 8

7. Information Dissemination I: Communication Theory

We have studied communication as a linear operation in which a certain sender uses a certain channel to deliver a message to a receiver (an audience) who then is affected in some way by the message...Today, even sober professionals like ourselves recognize that two-way interaction and feedback are essential concepts in our thinking about communication and its future.
--Daniel Lerner, World Communication, 1973

7. Dissemination I: Communication Theory - OUTLINE

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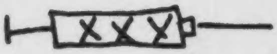
a. Midterm bibliography is due anytime today.

b. Demonstrate selected prominent information theories on board:

HYPODERMIC MODEL S/R



information injected and absorbed
stimulus/response "learning"

Research from WW2

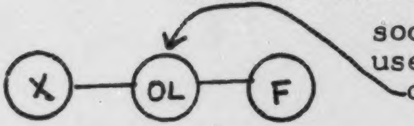
advertising, marketing
politics

SHANNON-WEAVER

descriptive process of communication & technology

see handout

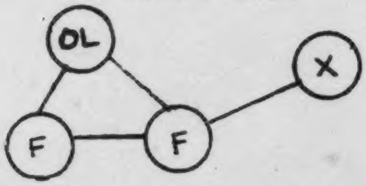
2-STEP FLOW MODEL



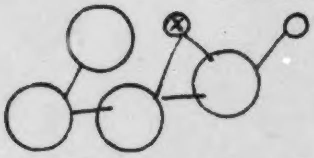
social structure
used in politics with opinion leaders

not direct flow
Problem identifying OL in diverse communities

MULTI-STEP



GENERAL SYSTEM THEORY



webs. not descriptive, more functional.
information is embedded in community

Lasswell: Communication=who said what in which channel to whom with what effect.

7. Dissemination I: Communication Theory - OUTLINE

---

c. Discuss Beltran's article on "horizontal" communication.

d. View the first 3-4 minutes of "Nuclear Power in Michigan" slide-tape show and stop it before a position on nuclear power is taken. Discuss how the information is presented and ask who the sponsor might be, what position is taken and why. Then review beginning and next few slides to see the anti-nuclear stance. Why would this group want to have an impartial, objective introduction? Discuss uses of persuasion in this presentation. Is is effective?

e. Discuss Ballenger's "Planning the PR Campaign."

SUPPLIES: Shannon-Weaver handout, slide-tape show and projecter.

READINGS

Beltran, Lu is Ramiro, "Farewell to Aristotle: "Horizontal" Communication," for Unesco's International Commission for the Study of Communication Problems, No. 48. Paris: Unesco, 1978.

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of the elements of the process and fails to identify relationships between elements. It fails to indicate the importance of situational variables. And it is oriented in a "one-way" fashion, i.e., it ignores the notion of process.

3.44 Words are static. Purely verbal models of the communication process, of which Aristotle and Lasswell provide only two examples of a group from which many others could be chosen, have two great disadvantages. They are frequently lengthy, and if not lengthy, of limited usefulness. They are seldom able to indicate the dynamism of a communication situation.

3.5 Some Visualizations

3.51 This section discusses briefly a number of communication models which have been visualized in several ways. A complete discussion of any one model is beyond the scope of the chapter. Yet it may help one to gain a background in communication to see some of the various ways people have expressed visually their communication interest. The section following discusses two models in much greater detail with the emphasis on use of the models in teaching.

3.52 In 1949, Claude Shannon, of the Bell Telephone Laboratories, and Warren Weaver, then with the Rockefeller Foundation, made scholarly hearts beat considerably faster with the publication of their book *The Mathematical Theory of Communication.* They attempted to do two things: reduce the communication process to a set of mathematical formulas, and discuss problems which can be handled with the model. They intended their formulation to apply to all communication, including mechanical communications systems. Fig. 3.1 below shows the Shannon and Weaver visualization. Because Shannon's definitions of the elements of the process as he saw them are rather precise, we repeat the entire definition here.

3.53 By a communication system we will mean a system of the type indicated schematically in Fig. 3.1. It consists of essentially five parts:

3.54 1. An *information source* which produces a message or sequence of messages to be communicated to the receiving terminal. The message may be of various types: (a) A sequence of letters as in a telegraph or teletype system; (b) A single function of time f(t) as in radio or telephony; (c) A function of time and other variables as in black and white television — here the message may be thought of as a function f(x, y, t) of two space coordinates and time, the light intensity at point (x, y) and time t on a pickup tube plate; (d) Two or more functions of time, say f(t), g(t), h(t) — this is the case in "three dimensional" sound transmission or if the system is intended to service several individual channels in multiplex; (e) Several functions of several variables — in color television the message consists of three functions f(x, y, t), g(x, y, t), h(x, y, t) defined in a three-dimensional continuum — we may also think of these three functions as components of a vector field defined in the region — similarly, several black and white television sources would produce "messages" consisting of a number of functions of three variables; (f) Various combinations also occur, for example, in television with an associated audio channel.

3.55 2. A *transmitter* which operates on the message in some way to produce a signal suitable for transmission over the channel. In

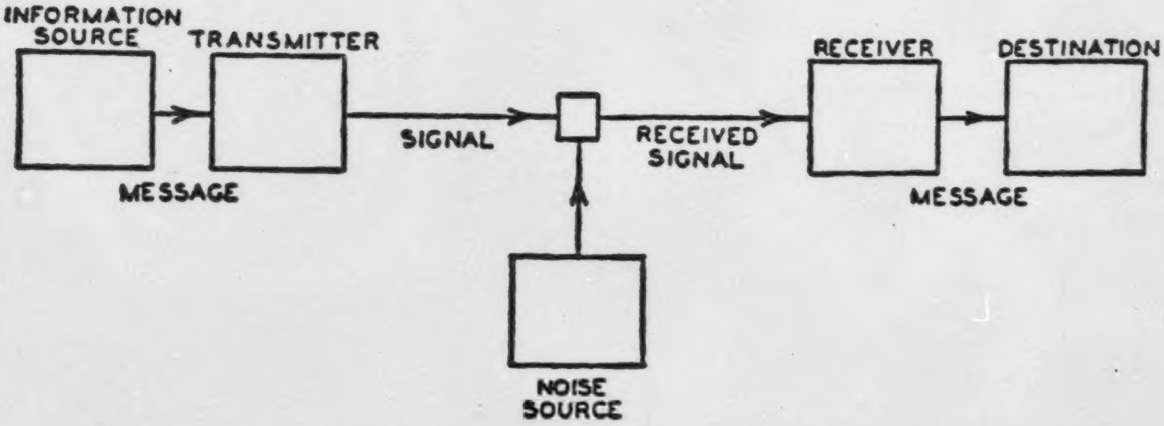

Fig. 3.1. Schematic diagram of a general communication system: Shannon and Weaver Model.

8. Information Dissemination II: Mass Media

All I know is what I read in the papers. --Will Rogers

8. Information Dissemination II: Mass Media - OUTLINE

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a. Send around sheet to sign up for individual appointments to discuss final projects.

b. Mass media has no single definition, but involves typically the following media: network television, AM-FM radio, wide-circulation newspapers and magazines.

c. View film, Shaping News for the Consumer, 17 minutes (Michigan Media number 7408) for a better idea of the identity and limitations of mass media.

d. Questions to raise: When is mass media effective? How are complex issues handled? What does it mean to be "a headline service"? What kind of coverage could students hope for with television reporting of a press conference? What might National Public Radio do with the same conference material?

e. View film, The Business of Newspapers, 43 minutes, (Michigan Media number 647-F).

COMMENT: This film was very popular in the first class, both prompting discussion on the day of screening, and in references to it later in the course.

f. Discuss "gatekeepers" and large/scale ownership of mass media. The MacBride Commission's Interim Report from Unesco offers international perspectives on this on pages 28-36. Identify some of the media monopolies or media empires. Note the growth of slick science magazines such as Science '82 and Geo.

g. Bring in Sandman's article on environmental coverage in the press. Discuss McLuhan's global village notions.

SUPPLIES: Films: Shaping News for the Consumer, and The Business of Newspapers. projector, screen.

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FILMS

Shaping News for the Consumer, 17 minute film (Michigan Media number 7408).

The Business of Newspapers, 43 minute film (Michigan Media number 647-F)

9. Information Dissemination III: Alternative Media

We need to concentrate on...ways in which people use messages, not, as we have in the past, on...ways in which messages can use people. --D. K. Berlo

9. Information Dissemination III: Alternative Media
OUTLINE

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a. Give background to alternative or 'mini-' media, using Everett's book (see bibliography).

history from muckraking in 19th century.
Alternative lifestyles with Whole Earth Catalog.

b. Current examples:

Radio stations, NPR, KPF in San Francisco (set up with a 3-year grant from Ford Foundation).

CATV history and Qube example.

Challenge for Change filmmaking experiment, described by Diaz Bordenave on pages 67-72.

Media work of Leonard Henney.

c. Examine samples of alternative media publications, such as Ann Arbor Observer, Detroit Metro Times, Flint Voice, and other local, or single-issue or narrowly-focused publications/information services.

d. Contrast the depth and frequency of coverage for environmental issues between alternative and mass media.

e. Discuss how alternative media is more in keeping with the interests of the New International Information Order in Unesco. Discuss the diffusion of information as nonformal education--to use an environmental education term--and as horizontal communication, as in Beltran's article read for unit 7.

f. Visit the Ann Arbor Public Access Cable television station. Meet with programmer Martha Schmitt or Director Charlene Ladd to discuss locally-originated programs, CATV's past history, present problems and future hopes.

COMMENT: This field trip had quite a favorable impact on several of the students during fall, 1981, and was highly ranked on course evaluation forms.

9. Information Dissemination III: Alternative Media

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ALSO SEE: Unesco materials in Unit 12.

9-3

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A Schematic View of the New Journalism: Practices and Media

Form	Medium	Content	Practitioners
The new nonfiction	Magazine articles, newspaper columns, books	Social trends, celebrity pieces, the "little people," public events	Tom Wolfe, Jimmy Breslin, Gay Talese, Norman Mailer, Truman Capote
Alternative journalism	Alternative newspapers and magazines	Exposés of wrongdoing in establishment organizations, attacks on bigness of institutions	Editors and writers for San Francisco *Bay Guardian*, *Cervi's Journal*, *Maine Times*
Journalism reviews	Newspapers and magazines	Analyses and exposés of journalistic practices	*(More)*, *Chicago Journalism Review*
Advocacy journalism	Newspaper columns, point-of-view papers, magazines, broadcasting and cable television	Social change, politics, public issues	Gloria Steinem, Pete Hamill, Nicholas von Hoffman, new advocacy papers
Counterculture journalism	Counterculture papers and magazines	Radical politics, psychedelic art, the drug culture, social services, protest	Editors and writers for L.A., New York, and Washington *Free Presses*; Berkeley *Barb*
Alternative broadcasting	Television (especially cable) and radio	Novel approaches to broadcast programming and practice, mostly reflecting counterculture	Raindance Corporation, Johnny Videotape, TVTV
Precision journalism	Newspapers, magazines, books	Survey research in reporting of social indicators, public concerns	Philip Meyer, Scammon and Wattenberg, news magazines

Notes

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[5] Eugene Cervi, "The Crybaby Millionaire Publishers," *Grassroots Editor*, November-December 1967, p. 14.

[6] Clayton Kirkpatrick, "The New Propaganda," *Bulletin*, September 1970, p.28.

[7] Jack Newfield, Robert F. Kennedy Memorial Symposium, University of Missouri at Kansas City, February 27, 1970.

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Chapter 1 Pp 1-13.

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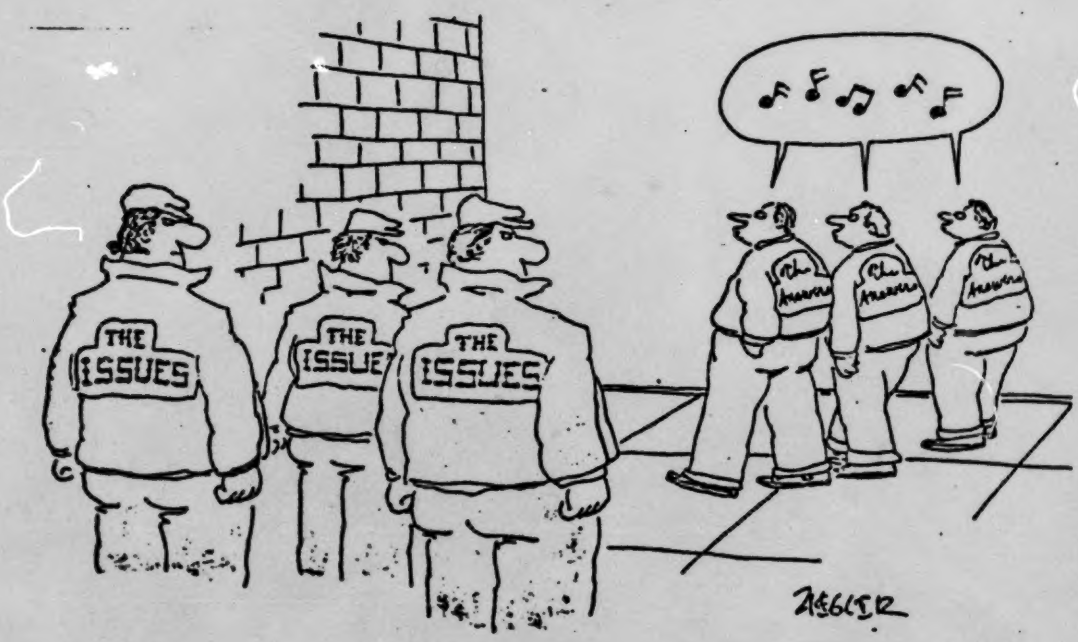
10. Decision-making and Effective Communication

By and large, our present problem is one of attitudes and implements. --Aldo Leopold, Sand County Almanac, 1949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The Answers
The Answers
ZIEGLER

10. Decision-Making and Effective Communication - OUTLINE

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a. Discuss articles by Robinson and Young. Use diagram below to help characterize information reception.

reaffirm
seeking
bias

FORMAL
attitude

information
belief

continuity
INFORMAL education/communication
change
behavior

b. Discuss statement: We seek information that affirms beliefs and reject information that threatens.

c. Work through guided design exercises on an information campaign design for the Ecology Center of Ann Arbor by Bruce Ballenger. (45-60 minutes)

d. Discuss what decision-making skills were needed for exercise. Suggest others from the condensed suggestions by Joseph Cooper, The Art of Decision-Making, on following pages.

e. Select other decision-making exercises from sources in the bibliography. There are also many environmental "games" that might be appropriate.

f. View film, Energy and Morality, 33 minutes (Michigan Media number 8435) to trigger discussion on information, values and decisions.

SUPPLIES: Ecology Center Guided Design; Newsprint and markers, Energy and Morality film, projector

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10. Decision-Making and Effective Communication - OUTLINE'

READINGS continued

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FILM

Energy and Morality, 33 minutes, (Michigan Media number 8435) by Swain Wolfe, Bitteroot Films.

10. Decision-Making and Effective Communication

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THE CREATIVE PROCESS

Writers on creativity are fairly well agreed that the stages of thinking through a problem fall into a pattern such as this:

1. Fact-finding
2. Analysis
3. Detachment from the problem
4. Production of ideas

The Fact-Finding Stage

The first suggestion is to write down and preserve all the information you accumulate during the fact-finding stages. What may seem of minor significance at the time it is noted may later be found to be the key to a final decision.

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Analysis

G. Polya gives some excellent guidance for analyzing data in his book *How to Solve It* (Princeton University Press, 1945). Although his book deals with mathematical methods, his check list holds for a much wider range of problem-solving situations.

"*Have you see it before?* Or have you seen the same problem in a slightly different form?

"*Do you know a related problem?* Do you know a theorem that could be useful?

"*Look at the unknown!* And try to think of a familiar problem having the same or a similar unknown.

"*Here is a problem related to yours and solved before. Could you use it?* Could you use its result? Could you use its method? Should you introduce some auxiliary element in order to make its use possible? Could you restate the problem? Could you restate it still differently? Go back to definitions.

"If you cannot solve the proposed problem, try to solve first some related problem. Could you imagine a more accessible related problem? A more general problem? A more special problem? An analogous problem? Could you solve a part of the problem? Keep only a part of the condition, drop the other part; how far is the unknown then determined, how can it vary? Could you derive something useful from the data? Could you think of other data appropriate to determine the unknown? Could you change the unknown or the data, or both if necessary, so that the new unknown and the new data are nearer to each other?

"Did you use all the data? Did you use the whole condition? Have you taken into account all essential notions involved in the problem?"

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Analysis continued

CHECK LIST OF PRACTICE TECHNIQUES FOR IMPROVING ANALYTICAL SKILLS

(For explanation of practice items, see list beginning on page opposite)

SKILL	PRACTICE
1. Associational perception	Clustering, Extended notation, Inputs
2. Elaboration	Action involvement, Extended notation, Ranking
3. Frame-of-reference facility	Inputs, Reflective analysis
4. Generalizing	Clustering, Outlining, Validating
5. Goal-mindedness	Counseling, Forecasting, Validating
6. Objectivity and skepticism	Counseling, Inquisitiveness, Involvement-detachment, Validating
7. Organizing	Clustering, Outlining, Ranking, Validating
8. Sequential perception	Action involvement, Reflective analysis
9. Strategic sensing	Gaming, Outlining, Ranking
10. Symbolizing	Training in symbolic disciplines

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Attribute Listing

Lists of attributes are merely extended descriptions of the object or situation in itself and in relation to its environment. Sometimes they turn into convenient check lists for analysis of a problem.

page 267

Check lists

The check list is an analytical framework. The list of attributes may serve this purpose. The check list assures that you will take into account everything that should be considered before reaching a decision. Throughout this book I have used many check lists. You will find them widely used in textbooks and reference works. Trade associations and government agencies include them in their publications to their membership and to the interested public. You will find check lists published frequently in technical and professional journals and magazines.

If you make your own check list, circulate it among other people who have familiarity with the problem. If you are particularly close to it, you may have omitted some items, or the collective experience of the others may bring out things of which you may not have thought.

page 269

11. Information Technology and Futures

Had the automobile developed at a pace equivalent to that of the computer during the past 20 years, today a Rolls Royce would cost less than three dollars and get three million miles to the gallon. --Reporter, Washington Star

11. Information Technology and Futures - OUTLINE

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a. Discuss visit to cable television studios briefly.

b. View slide-tape show on technology and communication futures, 10 minutes, to start discussion on possible "electronic futures."

COMMENT: Many natural resources students have a personal view that is low-technology oriented, which is not to say anti-technology. This slide show provided a common background of developments and issues so that there could be greater participation in discussion.

c. Discuss the possiblities of the "electronic cottage" and home computer stations.

d. View What is a Computer film, 19 minutes, (Michigan Media number 883) to give an animated introduction to computer design, binary and boolean logic, flowcharting, and possible computer applications. If the class is more sophisticated, the videotape, Computer Crime, 29 minutes (Michigan Media number 8321-V) raises e thical questions of computerized information management and white collar crime.

c. Have computer design consultants John Sayler (996-0998) and Cole Whiteman (761-7332) help demystify computers and offer possible strengths and problematic issues for the future. Topics may include:

Terminology and overview of how computers work
(see attached handout)

Political issues: Public boon or social evil?
Freedom of information......privacy threats
egalitarian.............technocracy by elites
environmental simulation....war games
new memory/vision for the blind...cruise missle

Computer applications in the workplace: wordprocessors; databank retrieval; communications network; administration; simulation.

Systems analysis and use of consultants

Environmental simulations for problem-solving.

d. Demonstrate uses of the Integrative Studies Center's IBM Personal computer.

11. Information Technology and Futures - OUTLINE

SUPPLIES: Film or videotape and projection equipment; overhead projector; IBM personal computer slide-tape show and projecter.

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Waters, Harry F., et. al., "Cable TV: Coming of Age, " in Newsweek, 24 August 1981. pp. 44-49.

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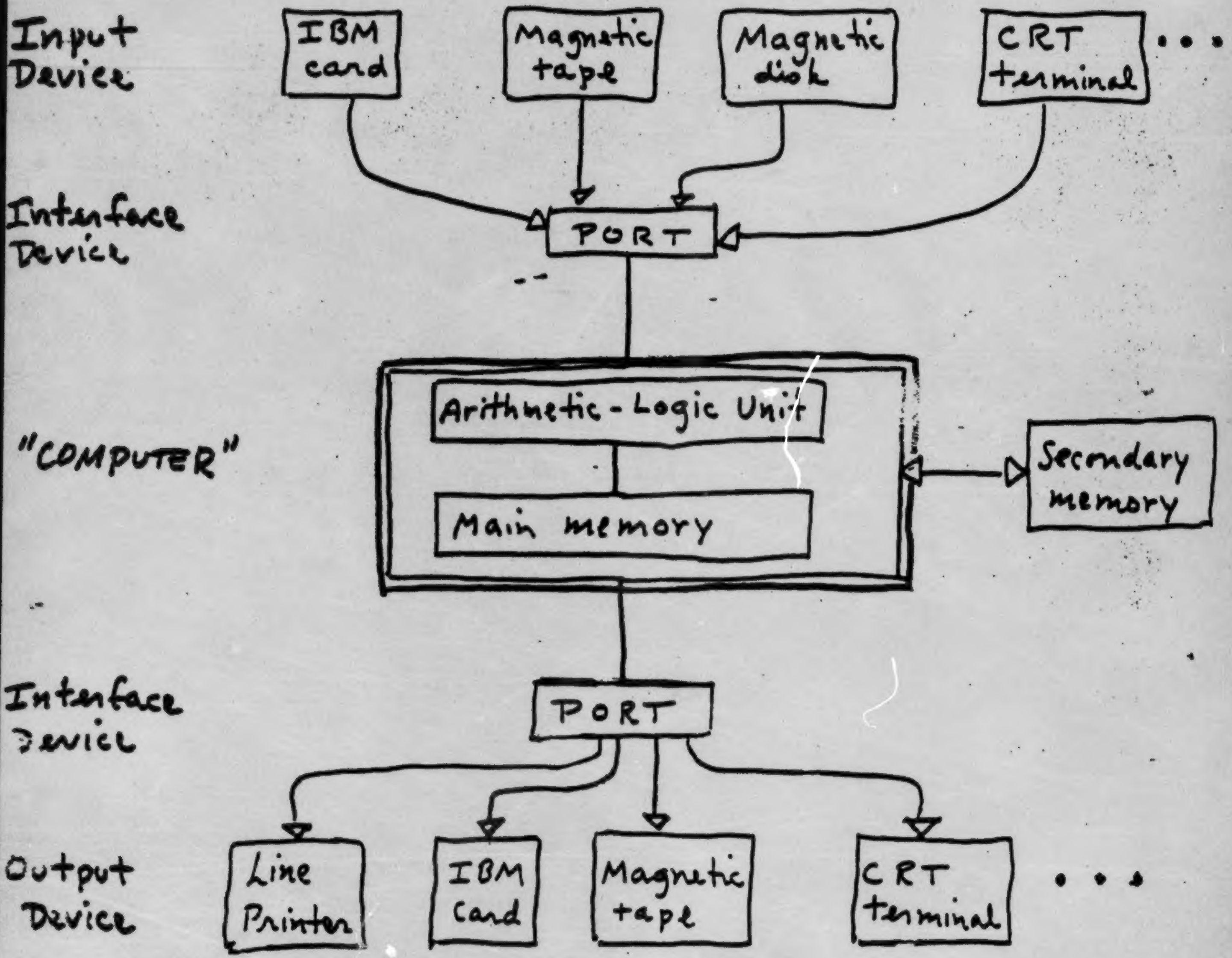
Wirbel, Loring, "Somebody is Listening--There's a Computer on the Line," in The Progressive, November, 1980. pp. 16=22.

Witt, William, "The Impact of Technology Upon Environmental Mass Communications," in Journal of Environmental Education, 2(1) 1979. pp. 38-41.

FILM

What is a Computer? 19 minute film (Michigan Media number 883).

COMPUTER: Logical Structure


Input Device
IBM card
Magnetic tape
Magnetic disk
CRT terminal
. . .
Interface Device
PORT
"COMPUTER"
Arithmetic-Logic Unit
Main memory
Secondary memory
Interface Device
PORT
Output Device
Line Printer
IBM Card
Magnetic tape
CRT terminal
. . .

12. International Information Issues

People and individuals have the right to acquire an objective picture of reality by means of accurate and comprehensive information through a diversity of sources and means of information available to them, as well as to express themselves through various means of culture and communication.
--The Kuala Lumpur Declaration, Unesco Conference, 1979

12. International Information Issues - OUTLINE

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a. Review final projects ideas to clarify assignment and learn of special audio-visual equipment needs.

Final project components (*=to be written and handed in):

Project presentation (10-15 minutes, may be handed
 in if appropriate, ie., an article)
*Description of "sponsor"
*Analysis of audience and information selected
*Sources used (bibliography)

b. Discuss readings.

Communication and Development, by Everett Rogers.

Give background to Rogers: "father" of diffusion theory; used economic measurements to define development in communication; influenced by foreign graduate students to rethink the role of communication in rural development. Revised ideas echoed in 1976 by Wilber Schramm, Big Media, Little Media, and E. Katz, Broadcasting in the Third World.

What is development (page 225)? How can mass media assist in rural reform movements?

Unesco's Call for a New International Information Order

Ennumerate the concerns of the less developed countries with regard to media and communication: access to information and media sources; control over information on country sent to the rest of the world; protection of journalists when collecting information; higher ethics in methods used by journalists in getting information; recognize privacy rights; LDCs wish greater access to telcommunications channels, satellite bands; frequencies; want to monitor programs and information broadcast within their country; wish to use communication methods in ways consistent with their culture; etc., etc.

c. Small group activity to simulate a LDC development issue and communication problem. We used the Co-operative Development program in the Philippines in Juan E. Diaz Bordenave's Communication and Rural Development, Unesco, 1977. (Case study pages are attached in this unit.)

Introduce the project and have students design an information and communication program that would bring the co-operative system to the attention of rural people. Have small groups report out on their suggestions and compare ideas.

COMMENT: This was a very well-received exercise because it required an application of many of the considerations in the New International Information Order. In addition, the actual success of the program in the Philippines and the imaginative use of many media and interpersonal strategies seemed exciting to the students.

Class suggestions included these ideas:

- educate local leaders.
- employ visual messages on posters, traveling theater, etc., to raise the level of interest.
- use local teachers or government representatives to travel around and pass the word.
- use local radio to educate and network to other barrios.
- have local leaders develop radio programs.
- show example of coop in operation, by slide show or visits to an operating coop.
- explain program to farmers.
- work within established social structure.
- be aware of opposition and educate.
- look at history of co-op efforts—where did they fail?

There are several other good case studies in Bordenave's book and also in the recommended Unesco publication included in the reading list. The blood fluke problem in India would be another good case study to use--see Van Der Schalie's article in the bibliography.

e. Give post test.

12. International Information Issues - BIBLIOGRAPHY

Diaz Bordenave, Juan E., Communication and Rural Development. Paris: Unesco, 1978. Excellent.

Cayley, David, "The Politics of Information," radio program in the Politics, Art and Information Series on Canadian Broadcasting Corporation. Excellent series; transcripts not available, but program guide is from: CBC, 69 Front St., E., Toronto, Ontarion M5E 9Z9 Canada.

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Hester, Al, "International Information Flow," in International and Intercultural Communication, eds. Heinz-Dietrich Fischer et. al. 2nd ed. New York: Hastings House. pp. 242-250.

Horton, Philip, The Third World and Press Freedom. New York: Praeger Publications, 1978. (excellent bibliography and articles.)

Katz, Elihu and George Wedell, Broadcasting in the Third World: Promise and Performance. Cambridge: Harvard University, 1977.

Keren, Carl and Larry Harmon, "Information Services Issues in Less Developed Countries," in Annual Review of Information Science and Technology, vol. 15. White Plains, NY: Knowledge Industry Publications, 1980. pp. 289-324.

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Noriega, Luis Antonio and Frances Leech, Broadcasting in Mexico. London: Routledge and Kegan Paul, 1979.

Porter, Richard E., "An Overview of Intercultural Communication," in Intercultural Communication: A Reader, eds, Larry A. Samovar and Richard E. Porter. Belmont, CA: Qadsworth, 1972. pp. 3-19.

Rosenberg, Jeff, "Raising Our Voices: Voice of America," aired on National Public Radio, 29 minutes, CO-81-27. 1981. $8.

12. International Information Issues - BIBLIOGRAPHY continued

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Smith, Anthony, _Geopolitics of Information: How Western Culture Dominates the World_. Cambridge: Oxford University Press, 1980.

Van Der Schalie, Henry, "Aswan Dam Revisited," in _Environment_, vol. 16, no. 9, 1974. pp. 18-24. (Another excellent case study on the blood fluke that could be used as a communication case study.)

UNESCO PUBLICATIONS ON FILE IN THE INTEGRATIVE STUDIES CENTER, SCHOOL OF NATURAL RESOURCES 8/82

These and other materials can be requested through: Unipub, 345 Park Ave., S., New York, NY 10010 (212) 686-4707

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1. Publications list as of 25 July 1980

32. "Call for a new international information order: preliminary remarks," by Dr. Gamal El-Oteife.

32. "Aims and approaches to a new international communication order," by Bogdan Osolnik, 1978.

**. "Interim report on communication problems in modern society," 1978.

48. "Farewell to Aristotle: Horizontal communication," by Luis Ramiro Beltran.

49. "Rural development and the flow of communication," by Henry R. Cassirer

50. "Advertising and public relations in the arms industries: their role in the mass media," by Karsten Weihe, et. al.

77. "The image reflected by mass media: stereotypes," by Margaret Gallagher (2 copies).

76 "Interaction between culture and communication," by Mochtar Lubix.

78. "The context of mass communication research," by Prof. James D. Halloran.

90. "Professional ethics in mass communication," by Bogdan Osolnik.

90. "Freedom and responsiblility of journalists," by Hubert Beuve-Mery.

COMMUNICATION AND SOCIETY

7. "Importation of films for cinema and television in Egypt," by Gehan Rachty and Khalis Sabat.

Unesco Titles Continued

NEW COMMUNICATION ORDER PUBLICATIONS

1. "Impact of modern communication technology, Australia," by Chris Duke.

2. "Impact of modern communication technology, II. Indonesia."

4. "Protection of Journalists."

5. "La presse bresilienne et sa vision des problemes d'importance internationale," par Nelly de Camargo.

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70. "Television traffic - a one-way street? A survey and analysis of the international flow of television programme material," by Kaarle Nordenstreng and Tapio Varis, ca. 1973.

77. "Cross-cultural broadcasting," by Eduardo Contreras *et.al*., ca. 1976.

83. "National communication policy councils, principles and experiences," by Marco Antonio Rodrigues Dias, *et.al*., 1979.

90. "Community communications, the role of community media in development," by Frances J. Berrigan, 1979.

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Bordenave, Juan E. Diaz, *Communication and Rural Development*, 1977.

Dance, F.R., *Broadcast training techniques*, 1976.

Kikshit, Kiranmani A., *et. al*., *Rural radio: programme formats*, 1979.

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1. Super 8: the modest medium

2. Film animation: a simplified approach, by John Halas, 1976.

3. Audio cassettes: the user medium, by Sumanta Banerjee, 1977.

4. VTR workshop: small format video, by Loretta J. Atienza, 1977.

21ST SESSION. GENERAL CONFERENCE, BELGRADE 1980. Papers

"Co-operation and assistnace in the application and improvement of national information and mass communication systems for social progress and development," note by the Secretary-General. 12 Nov. 1980.

"Draft report of Commission IV, Culture and Communication," 25 October 1980, with annex of recommendations.

"Intergovernmental conference for co-operation on activities needs and programmes for communication development," Dir-General's report and proposals, 3 September 1980.

"Report of the Director-General on the findings of the International Commission for the Study of Communication Problems," September 1980.

INTERGOVERNMENTAL COUNCIL OF THE INTERNATIONAL PROGRAMME FOR THE DEVELOPMENT OF COMMUNICATION

"Declaration of fundamental principles concerning the contribution of the mass media to strengthening peace and international understanding, to the promotion of human rights and to countering racialism, apartheid and incitement to war," adopted 22 November 1978 at 20th session of the general conference of Unesco.

"Reporting of international news and roles of the gatekeepers," summary reports of two Unesco meetings, Paris, 10-12 December 1979.

U.S. National Committee for Unexco, "Toward an American agenda for a new world order of communications," conference report, January 1980.

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Latin America and the Caribbean, *Final Report*, *Communication Policies*, *The San Jose Decalration*. San Jose, Costa Rica, 12-21 July 1976.

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Development of Communication (IPDC) "Resolution No. I," first session, Paris, 15-22 June 1981.

Executive board, 104 session, "Unesco's contribution to the establishment of a new international economic order, Paris, 9 May 1978.

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Meeting of experts on the right to communicate, Report, Minila, Philippines, 15-19 October 1979.

Study Group meeting on the right to communicate, Final Report, London, 3-5 March 1980.

Telecommunication working group, "Low telecommunication rates as a major contribution towards the establishment of a NWICO", 1979.

Organization, or ‘ institutional context ’

The project was the responsibility of Unesco and the Government of Trinidad and Tobago, with the Trinidad and Tobago National Commission for Unesco acting as liaison; the Secretary General of the latter organization played an important role in supervising and directing the project. Locally, the project worked with a co-ordinating committee of adult educators and representatives of community action groups.

Originally, provision was made for relationships with ILO, FAO, the World Health Organization (WHO), the United Nations Fund for Population Activities (UNFPA) and the Unesco Regional Communication Team, but during the first year of operations these bodies had little association with the project.

The media

Media available on Tobago when the project began included:

Two national newspapers published in Port-of-Spain (Trinidad), which carried little news of local interest to Tobagonians.

One government radio station (Radio 610), also located in Port-of-Spain. Radio 610 maintained a small studio in Scarborough (capital of Tobago) but this was not staffed for local production.

One television station in Port-of-Spain.

The original project plan called for media to:

Provide information about community and educational activities.

Promote and maintain interest in such activities by providing a forum for discussion and information.

Develop specific materials for educational projects.

Provide a means of feedback from individuals and groups to local authorities and others interested. The intent was to involve the local population as fully as possible and make the most of existing services.

Thus, there was to be heavy emphasis on radio, simple print media (a local community newspaper), and slides, posters and simple audio-visual materials.

Subsequently, the project was to use a mobile vehicle equipped with videotape and photographic and slide projection facilities. Eventually television, too, was to be considered.

By the end of the first year, however, some of the early media expectations were just not being fulfilled. Lack of direction and limitations in skills soon exposed the limitations of video.

Attempts to bring radio into play proved abortive. The belated discovery of Radio 610's poor coverage led to ill-conceived plans for a local station being abandoned in the face of heavy capital costs.

In fact, it is the oldest mass medium which proved to be the most suitable to the needs and circumstances of Tobago. Largely through the initiative of the young associate expert, the *Tobago News* was launched and by the end of 1975 was showing both a wide community appeal and the possibility of sustained commercial viability.

Utilization (diffusion)

During the project's first year, it seems to have generated only general ideas about the use of media productions.

Research and evaluation

For research, see under ‘Project Design’, above.

The project was meant to have a strong evaluation component. (This was prejudiced from the start by the lack of basic data against which to measure results.) During October-November 1974 a Unesco consultant spent one month with the GROW project. His mission was to evaluate progress to date (in terms of community development and use of media), help redefine objectives, and identify equipment and training needs.

The consultant found in general that the project needed more time to develop real roots in Tobago. He endorsed the plans for a community newspaper and for a mobile community radio, and made recommendations on project organization and equipment purchase. However, his report cannot be considered a deep study of the project's problems and possibilities, or a document of use to others engaged in comparable projects.

The informal evaluation made by the Unesco staff member in April 1975 concluded that:

> The project personnel are small in number, but enthusiastic, and their main problem seems to have been lack of direction and an inability to determine priorities or to plan ahead for their work. There seems to be more than a reasonable possibility that, once some refining of the programme has been completed, the project will move ahead and produce some concrete results.

Case study 10

The Philippine co-operatives development programme—**the Philippines**

Location: the Philippines.

Period of operation: five years—1973–78.

Source of Information:

Bureau of Cooperatives Development. *Overview of the Philippine Cooperatives Development Programme.* Quezon City, n.d.

——. *Question and answer on the Samahang Nayon.* Quezon City, 1973.

Department of Local Government and Community Development. *Cooperatives strategy for rural development.* n.d. (Mimeo.)

Report on co-operatives for the president. no. 24. March 1975. (Mimeo).

Sacay, Orlando J., *Samahang Nayon: a new concept in co-operative development.* Quezon City, National Publishing Cooperative Inc., 1974.

Genesis; background; reasons for the project

The Republic of the Philippines is an archipelago made up of over 7,000 islands off the south-east coast of Asia. Of a population of about 42 million, 70 per cent is rural. The nation's economy is largely based on exports of such basic agricultural products as sugar, copra and coconut oil.

The distribution of income in the Philippines is very unequal; 70 per cent of Philippine families earn less than 2,500 pesos a year, [1] while only 0.6 per cent earn over 20,000 pesos annually.

For two decades land reform has been viewed as the key to achieving a more equitable distribution of income. The first land reform act dates from 1955, followed by a second in 1963. These had little effect. In 1973 a new land reform programme was accompanied by a scheme for the formation of farmers' co-operatives and the institutions and services required to support them. This scheme was formalized by a decree on co-operatives approved by the President in April 1973.

Development of farmers' co-operatives was not a new idea. But in the past such organizations had been ineffective owing to, among other factors, inadequate and discontinuous efforts in co-operative education, and mismanagement or lack of qualified and adequately trained managers. Thus, the new scheme includes a widespread educational and promotional programme which has made important use of mass media.

Sponsorship

The Philippine Government, working through the Department of Local Government and Community Development (DLGCD), and specifically the newly formed Bureau of Cooperatives Development within this department, initiated and is responsible for the co-operatives programme. Under the administrative aegis of the DLGCD, the Bureau of Cooperatives Development directly handles the planning, organization and implementation of the co-operatives project, liaising closely with the Bureau of Local Government and the Bureau of Community Development for common tasks and infrastructure, especially in the field.

Funds for the programme, excluding salaries and allowances for DLGCD field-workers, were expected to amount to about 60 million pesos yearly. These come from government budgetary appropriations, foreign financial assistance (notably from the Canadian International Development Agency), and other sources; the programme has benefited from many donations in kind (e.g. radio time, paper for printing) from business enterprises and individuals. The Armed Forces donated time on their computer facilities. Of the budget for the first year 1973–74, 34 per cent was marked for research and evaluation.

Clientele and agents

The clientele are rural villagers—self-employed farmers, fishermen, plantation workers, either tenants or landowners—whose common bond is their *barrio* (or village) of residence.

On the regional, provincial and municipal levels, agents are field workers of the Department of Local Government and Community Development, most of whom are long-term civil service personnel familiar with rural development work. Training follows the 'snowball' principle: top technical staff of the DLGCD and selected experts designed a course for the regional directors, who then trained the approximately 65 provincial directors, who in turn trained approximately 1,400 municipal agents.

On the *barrio* level, some change agents are local DLGCD workers, but most are 'volunteer *barrio* workers', who are usually primary school teachers. (Almost every *barrio* in the Philippines has at least one teacher.) The *barrio* workers are trained by municipal DLGCD staff. They carry out the promotion and recruitment campaigns in their *barrios* and conduct the pre-membership education programme for prospective association members. Once formed, each *Samahang Nayon* (pre-co-operative) elects its own officials and board of directors, who serve without pay; members continue to promote the programme to non-members in the *barrio*.

Scope

The original plan called for involving 25,000 *barrios* nation-wide. All of these were to be reached by communication media.

At the end of the first year of operation (end of June 1974), 15,729 *barrios* had been covered and 10,419 *Samahang Nayon* organized with a total membership of 559,054 and total savings of 5,657,864 pesos. These results were the work of some 2,260 field workers and 8,778 volunteer *barrio* workers. According to a report to the President dated March 1975, by this date some 16,885 *Samahang Nayon* had been organized, with 743,426 members. Of these, 12,946 *Samahang Nayon,* with 612,258 members, had been registered. Total savings amounted to 28,633,000 pesos. In addition, eighty-eight *Kilusang Bayans* (full-fledged co-operatives) were organized, of which seventy-one were registered.

The co-operatives development programme is considered of major importance. In his preface to *Samahang Nayon: A New Concept in Co-operative Development,* President Marcos wrote:

> It has become one of the most important programmes of the government at this time perhaps one of the most crucial to the success of the wide-ranging body of reforms tha aim at increased production.

The programme is not experimental. Pre-co-operatives that develop successfull merge to become full-fledged co-operatives, while those that fail to meet a requirements repeat the educational course (see 'Project Design' below).

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[1] 7.50 pesos = $1 (conversion rate in mid-1975).

Objectives

The primary objective of the co-operatives development programme is to help improve the quality of life for the Filipino farmer by training him to become a better producer, allowing him to pay off land amortizations, giving him a means of saving, encouraging him to perform economic activities such as buying supplies and selling produce collectively. The programme is also intended to develop marketing outlets for farm products.

Underlying these objectives is an even more basic aim: to change attitudes. Previous attempts at organizing co-operatives had largely failed because farmers waited passively for these organizations to provide them with funds: they did not see them as a tool which they themselves constructed and controlled.

The new co-operatives programme set out to show the farmer that the co-operative can be an instrument for self-sufficiency. Under this programme, farmers begin by forming a pre-co-operative or *barrio* association, called a *Samahang Nayon* (see 'Project Design' below). Only when they have come to understand and practise certain principles of co-operative action do they go on to form part of a full-fledged co-operative. During the pre-co-operative stage the farmer comes to see that—even if he farms only a small area—by grouping together with other small farmers, saving, and sharing resources he can take hold of his own destiny; in other words, he does not have to rely on the landlord or the government. Essentially, this change in attitudes amounts to a change in the farmer's view of social structure, and thus is potentially quite revolutionary.

Achieving these objectives—and especially changing attitudes—calls for serious promotional and educational efforts backed up by a widespread communication campaign. These make use of traditional Filipino ideals adapted to modern concepts. One of these is *Bayanihan*, meaning a sense of co-operative fellowship among people from the same village. Traditionally, *Bayanihan* applied only to services and goods; the challenge now was to get the farmer to extend it to sharing money and land. Another is *Baranggay*, originally meaning a large boat used by one clan (later, the Spanish word *barrio*, for village, came to replace it); it also has the connotation of organizing members of a group to work together. The name chosen for the *barrio* association, *Samahang Nayon*, connotes a village-moving-together. By using these traditional words in explaining new concepts, the promotional and educational campaign sought to root the co-operative idea in the Filipino value structure.

The use of communication in achieving these objectives was based on several principles:

In developing pre-co-operatives, and eventually co-operatives, education is a first necessity: the farmer must understand what he is doing and why he is doing it.

Education must be provided through interpersoal contacts.

The best change agent at the *barrio* level is someone from the village who can link traditional society to modern factors of change.

Rural mass media (radio, print) can alert, inform, interest and stimulate rural audiences and support the educational programme.

Media communications are especially effective if the farmer can identify with someone he recognizes (see 'The Media' below).

On the surface, everyone agreed with the co-operatives programme's objectives. However, there is potentially a certain amount of opposition to some of the roles co-operatives are eventually to play—for example, from rural bankers who do not welcome rivals to their business or who on principle think farmers are incapable of handling complex financial matters; and from marketing agents who see a possible threat to their income.

Project design

The co-operatives development programme has four stages. The first (lasting fifty-five weeks) calls for formally organizing and developing *Samahang Nayon* in the villages. This stage has two phases. Phase one, or the organizational phase, lasts ten weeks. During this period prospective members receive eight pre-membership lessons from field workers: on agrarian reform, the history and general principles of co-operatives, the *Samahang Nayon*. After this phase, an organizational meeting is held, officers are elected, and the *Samahang Nayon* applies for registration. To register it must have a minimum of twenty-five members (and not over 200), each of whom has paid a ten-pesos membership fee.

In the second phase of stage one, members learn how to manage and strengthen the *Samahang Nayon*. During this period, all members of the board of directors and officers of the *Samahang Nayon* take a twenty-week course on the responsibilities of officers, parliamentary procedures, group discussion techniques, how to conduct continuing member education and the campaign for expanding membership, how to keep accounts and prepare reports, etc. After the management training, two farmers are chosen for a two-week training in improved technology, after which they serve as agricultural counsellors and they deliver twenty technical lessons to be members of the *Samahang Nayon*. Following this cycle the *Samahang Nayon* chooses a secondary enterprise, or cottage industry, to specialise in and receives eight lessons on this enterprise. Finally, all members of the *Samahang Nayon* receive twelve of the lessons on management previously given to the board of directors and officers.

In the second stage, *Samahang Nayons* that have satisfactorily completed management training and technical education and put together the required savings (a minimum of 25,000 pesos) group together. When ten such associations join, they can become a fully fledged agricultural co-operative. These can serve as assembly, storage and processing points for all products delivered by member *barrio* associations. They can also serve as distribution agencies for manufactured goods and farm supplies.

In the third stage, consumers' co-operatives are organized in major urban areas to serve as outlets for agricultural products. In the fourth and last stage, the entire co-operative system is integrated into large co-operative enterprises.

Experts from various disciplines contributed to the programmes design. Foremost among these was Orlando J. Sacay, Under Secretary for Cooperatives Development, an economist with long experience in rural development and an acute awareness of the weaknesses of past efforts. Other consultants included an expert in rural communications from the College of Agriculture of the University of the Philippines, who helped design media strategy; an expert in communications and research who helped design the computerized programme and back system; an economics and finance specialist; five veteran co-operatives nizers, and three experienced rural workers.

Phases one and two of the co-operative development programme were en down into ninety-seven numbered activities—twenty-four in phase one seventy-three in phase two—and each activity was described in detail in manuals (see 'The Media' below). The entire programme was computer- : in this way field workers' reports can be fed into the computer and provide mation on the programme's progress at any given moment.

Organization, or 'institutional context'

'Sponsorship' above.

Some organizational problems arose because the Bureau of Cooperatives lopment was appended to the existing structures of the Department of l Government and Community Development. Thus, though headed by an er Secretary of Co-operatives, the bureau did not have its own field staff it had to work through regional and provincial directors who were already ing full time on local government and community development activities sometimes found it difficult to assume responsibility for co-operative devel- ent in addition to their regular work.

Various other agencies contributed to the programme—for example, *hang Nayon* members were trained by technical agencies such as the au of Agricultural Extension, the National Cottage Industry Development ority, and the National Manpower and Youth Council.

The media

communications media used to support the co-operatives development ramme were radio and printed materials.

Radio communications included a jingle, spot announcements, slogans and ssion programmes. These were broadcast by both government-owned and te stations (250 stations in all), with the latter donating millions of pesos' h of time free. The jingle used a melody based on an old folk song and was by the country's most popular singer, Nora Aunor, who donated her talents campaign. It was played once every fifteen minutes every day for about nonth before the field workers entered the *barrios*, and after that twice an

The thirty-three spots each lasted one minute. They presented a dialogue en a 'believer' and a 'sceptic', and disseminated selected bits of informa- bout the *Samahang Nayon*. Broadcasts were was scheduled to coincide the educational campaign of the co-operatives development programme. ythree slogans were also produced and broadcast at different intervals.

The forty-five discussion programmes, reviewing topics covered by the es presented by field workers, each lasted one-half hour. They too were ded in eight languages. Called the 'school-on-air', they were broadcast g phase two of stage one, between 7.30 and 8.00 p.m. on Saturday even- , and were designed both to reinforce other media and to reach radio ners who had missed earlier media and educational coverage. Members of

the *Samahang Nayon* assembled to hear them together and to discuss the substance and other matters of interest after the broadcast.

Supplementary radio support came from occasional radio news items, interview programmes and press releases.

Print communications included ten four-colour leaflets—two were promotional and the other eight corresponded to the eight pre-membership lessons. A major brochure about the *Samahang Nayon* was distributed at the end of the course. Prospective members were asked to pay a nominal fee for these materials. Seven posters for display in the *barrios* were also printed. Leaflets, brochure and posters were translated into the country's eight major dialects and used simple, but realistic sketches. Cartoon style, except for humour, was avoided lest the programme not be taken seriously.

In general, the strategies governing the media campaign were as follows:

Use economic motivational appeal by stressing the benefits offered by *Samahang Nayon*.

Use positive social motivational appeal by associating membership with prestige, e.g. getting *barrio* leaders to support publicly the association, enhance social status of the members by making them more visible through public activities and mass media.

Use negative social motivational appeal by bringing social pressure or *hiya* to bear on any members and officers remiss in their responsibilities to the *Samahang Nayon*.

Create a bandwagon effect, particularly during the preorganizational phase.

For the way in which the media were expected to serve the co-operative development programme, see the list of principles under 'Objectives' above.

Utilization (diffusion)

For results of a study of the effectiveness of the media, see 'Research and Evaluation', below.

In general, radio programmes were played widely and according to schedule. However, some personnel in local stations did not understand the letter of instructions and played some spots out of sequence; this happened easily because all the spots were recorded on one 45 r.p.m. record with a very narrow cueing distance between the bands.

Distribution of the printed media posed a serious problem. The study of extent of understanding (see 'Research and Evaluation', below) showed that on the average *Samahang Nayon* members received two of the eleven leaflets, but 53 per cent did not receive any at all. This was not due to a shortage but to weaknesses in the distribution system.

Research and evaluation

See 'Project Design' above.

The co-operatives development programme incorporated a system of weekly field worker's reports, the data from which were computerized. The original computer report forms proved too complicated for field workers to fill in accurately and had to be simplified. Computer and other data served as the basis for the monthly report to the President.

A financial grant was made to the Agricultural Credit and Cooperative
itute (ACCI) of the University of the Philippines to carry out a verification
evaluation study of the *Samahang Nayon* programme based on field wor-
reports. The ACCI researchers interviewed 17,400 persons from 2,479
ios, 30 per cent of whom were not members of *Samahang Nayon*, to deter-
the extent to which various aspects of the programme as taught by the
ational and promotional campaign were understood. [1] As for the sources
which information came, the study showed that the field workers provided
najor source for both groups. The stated impact of radio was much less than
cted, even though 74 per cent of all respondents had radio sets. The impact
rinted materials was even more disappointing. However, it is clear that the
media significantly improved and reinforced the field workers'
tiveness.

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ndings are given in *Samahang Nayon: A New concept in Co-operative Development*, p. 123
seq.

Chapter 3

A critical analysis of the case studies

Although the case studies presented in the previous chapter constitute only a small sample of the various communication projects undertaken around the world in rural areas, they are fairly representative of past efforts to attack rural underdevelopment. In this chapter we analyse the key variables of these case studies, keeping in mind the historical development of theoretical knowledge about the role of communication in rural development presented in Chapter 1.

What ideas of rural development and the use of communication in fostering this development lay behind these ten programmes? Are these ideas clearly stated, or must they be inferred? Are there any discrepancies between expressed principles and goals and those actually in evidence? To what extent are these projects consistent with more recent concepts of communication and rural development? What lessons can we learn from an analysis of these projects for the improvement of present and future programmes?

Genesis; background; reasons for the project

All the projects described in the case studies arose, in theory at least, out of two convictions: the rural area chosen required some sort of development aid, and communication could help in bringing this aid.

However, to say this is only to begin to explain the reasons for establishing these and other rural development programmes using communication. There are many more questions to ask—for example:

Who first perceived the need for rural development? The local community itself, private groups, regional or national governments, bilateral or international aid agencies? Or several of these at once?

How did these instigators define rural development? Was it a matter of changing attitudes, increasing productivity, improving the quality of the individual's life (through education, better health, etc.), encouraging rural populations to remain on the land rather than flock to urban areas, giving

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COMMUNICATION AND SOCIETY

7. "Importation of films for cinema and television in Egypt," by Gehan Rachty and Khalis Sabat.

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1. "Impact of modern communication technology, Australia," by Chris Duke.

2. "Impact of modern communication technology, II. Indonesia."

4. "Protection of Journalists."

5. "La presse bresilienne et sa vision des problemes d'importance internationale," par Nelly de Camargo.

8. "Telecommunication tarriffs for the mass media."

REPORTS AND PAPERS ON MASS COMMUNICATION

70. "Television traffic - a one-way street? A survey and analysis of the international flow of television programme material," by Kaarle Nordenstreng and Tapio Varis, ca. 1973.

77. "Cross-cultural broadcasting," by Eduardo Contreras *et.al*., ca. 1976.

83. "National communication policy councils, principles and experiences," by Marco Antonio Rodrigues Dias, *et.al*., 1979.

90. "Community communications, the role of community media in development," by Frances J. Berrigan, 1979.

UNESCO BOOKS ON INTERNATIONAL COMMUNICATION

Bordenave, Juan E. Diaz, *Communication and Rural Development*, 1977.

Dance, F.R., *Broadcast training techniques,* 1976.

Kikshit, Kiranmani A., *et. al*., *Rural radio: programme formats*, 1979.

Unesco titles continued

MONOGRAPHS ON COMMUNICATION TECHNOLOGY AND UTILIZATION

1. Super 8: the modest medium
2. Film animation: a simplified approach, by John Halas, 1976.
3. Audio cassettes: the user medium, by Sumanta Banerjee, 1977.
4. VTR workshop: small format video, by Loretta J. Atienza, 1977.

21ST SESSION. GENERAL CONFERENCE, BELGRADE 1980. Papers

"Co-operation and assistnace in the application and improvement of national information and mass communication systems for social progress and development," note by the Secretary-General. 12 Nov. 1980.

"Draft report of Commission IV, Culture and Communication," 25 October 1980, with annex of recommendations.

"Intergovernmental conference for co-operation on activities needs and programmes for communication development," Dir-General's report and proposals, 3 September 1980.

"Report of the Director-General on the findings of the International Commission for the Study of Communication Problems," September 1980.

INTERGOVERNMENTAL COUNCIL OF THE INTERNATIONAL PROGRAMME FOR THE DEVELOPMENT OF COMMUNICATION

"Declaration of fundamental principles concerning the contribution of the mass media to strengthening peace and international understanding, to the promotion of human rights and to countering racialism, apartheid and incitement to war," adopted 22 November 1978 at 20th session of the general conference of Unesco.

"Reporting of international news and roles of the gatekeepers," summary reports of two Unesco meetings, Paris, 10-12 December 1979.

U.S. National Committee for Unexco, "Toward an American agenda for a new world order of communications," conference report, January 1980.

Unesco titles continued

INTERGOVERNMENTAL CONFERENCE ON COMMUNICATION POLICIES

Latin America and the Caribbean, Final Report, Communication Policies, The San Jose Decalration. San Jose, Costa Rica, 12-21 July 1976.

Asia and Oceania, Final Report, Agenda, Addendum, Kuala Lumpur Declaration, Kuala Lumpur, Malaysia, 5-14 February, 1979.

Asia and Oceania. Second Consultation on follow-up to intergovernmental conference on communication policies in Asia and Oceania, Final Report, New Delhi, India, 15-20 December 1980.

Africa, Final Report, Agenda, The Yaounde Declaration, Yaounde, Cameroon, 22-31 July, 1980.

Unexco, Intergovernment conference for co-operation on activities, needs and programes for communication development, Final Reprt, Paris, 14-21 April, 1980.

OTHER UNESCO DOCUMENTS

Consultation on ways to promote the inclusion of the principles of the declaration of the mass media and the concept of the New World Information and Communication Order (NWICO) in the curricula of communication teaching and training institutes, Final Report, Paris, 7-9 May 1979.

Development of Communication (IPDC) "Resolution No. I," first session, Paris, 15-22 June 1981.

Executive board, 104 session, "Unesco's contribution to the establishment of a new international economic order, Paris, 9 May 1978.

General Conferenoe, 19th session, "Report on means of enabling active participation in the communication process and analysis of the right to communicate;" Nairobi 1976.

International Telecommunication tariff structure working group, third meeting, "Low telecommunication rates: development and conventional press bulletin services, telex, telephone calls, tv news exchanges, etc.," Paris 26-27 June 1980.

Le conseil international des telecommunications de presse. "La transmission de l'information mondiale tarifs et moyens disponibles," 1978.

Unesco titles continued

Meeting of consultants, "The free and balanced flow of information in a new communication order," Paris 18-21 December, 1978.

Meeting of experts on the right to communicate, Report, Minila, Philippines, 15-19 October 1979.

Study Group meeting on the right to communicate, Final Report, London, 3-5 March 1980.

Telecommunication working group, "Low telecommunication rates as a major contribution towards the establishment of a NWICO", 1979.

PART IV: Appendix

Fall 1981: Course Outline
Reading List
Course Evaluation Form

NR 501 Information Theory and Management, Fall 1981
Div. 709 Sec. 011 3 Credits Tues 1-4 1504 Dana
Instructors: Prof. Ron Rollet, Nancy Yakes, Rich Block

COURSE OUTLINE

In our information-abundant society, it is important to be able to define and locate the information that is needed to answer questions as well as to assess the usefulness of the accumulated data. This course surveys systems theories and management considerations, examines interdisciplinary models, and raises issues of information politics. Individual projects and small group activities are used to build skills in information gathering, organizing, and decision-making.

Sept. 15	(1)	Introduction
Sept. 22	(2)	Nature of Information I: Objectivity
Sept. 29	(3)	Nature of Information II: Interpretation
Oct. 6	(4)	Information Theory and Systems Analysis MIDTERM BIBLIOGRAPHY TOPIC DUE
Oct. 13	(5)	Forms of Information
Oct. 20	(6)	Sources I: Information Structure in Three Disciplines
Oct. 27	(7)	Sources II: Indexing for Management
Nov. 3	(8)	Sources III: Information Management Decisions MIDTERM BIBLIOGRAPHIES DUE
Nov. 10	(9)	Information Dissemination: Mass Media MAKE APPOINTMENTS TO DISCUSS FINAL PROJECT
Nov. 17	(10)	Information Dissemination: Alternative Media
Nov. 24	(11)	Information Technology and Futures
Dec. 1	(12)	International Information Issues
Dec. 8	(13)	FINAL PROJECTS DUE

Course readings are:

Smith, Anthony. 1980. The Geopolitics of Information, How Western Culture Dominates the World. New York: Oxford Univ. Press. *Paperback, $4.95. Available at U-Cellar, Ulrichs, Follets.*

Coursepack at Dollar Bills, 611 Church St., 665-9200. Ask for: NR 501, Rollet, Part 1.

Suggested Reading:

Orwell, George. 1984. *Available from many publishers since its first publication in 1949. Paperback, under $2.*

NR 501 Information Theory and Management, Fall 1981
Instructors: Prof. Ron Rollet, Nancy Yakes, Rich Block

REQUIRED COURSE READINGS *Course pack articles indicated by letters a-n*

1. Introduction Handouts

2. Nature of Information I: Objectivity

Hendle, Fred. 1973. Empty Rhetoric and Operational Thinking. Physics Dept., The University of Michigan.

Smith, Anthony. 1980. The Geopolitics of Information, How Western Culture Dominates the World. New York: Oxford University Press.

3. Nature of Information II: Interpretation

Continue with Smith.

(a) Lewis, Carolyn. 1980. Three Mile Island. In The Eye of the Storm, ed. by Marvin Barrett and Zachary Sklar. Du Pont-Columbia University Survey of Broadcast Journalism. New York: Lippincott & Crowell. Pp. 108-202.

4. Information Theory and Systems Analysis

(b) Wyllys, Ronald E. 1979. System Design--Principles and Techniques. Annual Review of Information Systems and Technology. American Society for Information Science (ASIS). v. 14. White Plains, NY: Knowledge Industry Publications, Inc. Pp. 3-29.

(c) Imboden, Nicholas. 1980. Managing Information for Rural Development Projects. Paris: Development Centre of the Organisation for Economic Co-operation and Development. Chapters I, II, and Appendix.

5. Forms of Information

Finish Smith's book.

(d) Young. R.A. 1980. The Relationship Between Information Levels and Environmental Approval: The Wilderness Issue. Journal of Environmental Education. 11(3):25-30.

6. Sources I: Information Structure in Three Disciplines

(e) Crawford, Susan. 1978. Information Needs and Uses. In Annual Review of Information Science and Technology. ASIS. v. 14. White Plains, NY: Knowledge Industry Publications, Inc. Pp. 3-29.

7. Sources II: Indexing for Management

(f) Berninger, Douglas E. and Burton W. Adkinson. 1978. Interaction between the Public and Private Sectors in National Information Programs. In Annual Review of Information Science and Technology. ASIS. v. 14. White Plains, NY: Knowledge Industry Publications, Inc. Pp. 3-29.

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8. Sources III: Information Management Decisions

(g) Miloy, Leatha F. 1974. Coastal and Marine Information Programs. Coastal Zone Management. 1(2): 165-174.

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9 & 10. Information Dissemination: Mass and Alternative Media

(h) Sandman, Peter M. 1974. Mass Environmental Education: Can the Media do the Job? In Environmental Education ed. by James A. Swan and William B. Stapp. New York: Wiley. Pp. 207-247.

(i) Whitehead, Clay T. 1975. Big Media--Free Press. In Moments of Truth, ed. by Marvin Barrett. Du Pont-Columbia University Survey of Broadcast Journalism. New York: Thomas Y. Crowell Co. Pp. 203-215, and the Appendix.

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11. Information Technology and Futures

(j) Barrett, Marvin and Zachary Sklar. 1980. Gadgets & Gimmicks: The Communication Revolution. In The Eye of the Storm. New York: Lippincott & Crowell. Pp. 158-187.

(k) Witt, William. 1979. The Impact of Technology Upon Environmental Mass Communications. Journal Environmental Education. 2(1): 38-41.

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12. International Information Issues

(l) Keren, Carl and Larry Harmon. 1980. Information Services Issues in Less Developed Countries. Annual Review of Information Science and Technology. ASIS. v. 15. White Plains, NY: Knowledge Industry Publications, Inc. Pp. 289-384.

(m) Rogers, Everett M. 1976. Communication and Development. In Communication Quarterly. 3(2): 213-240.

(n) UNESCO. 1980. Toward An American Agenda for a New World Order of Communications. Washington, DC: UNESCO. Pp. 11-19.

NR 501 Information Theory and Management, Fall, 1981

COURSE EVALUAIION

Please rank each catagory 1-5 (1=good, 5=poor) and add comments. This will help us plan for the next session of the course. Thanks.

1. Session 2: Nature of InformationI: Objectivity.
   good 1 2 3 4 5 poor.
   Readings: Empty Rhetoric and Operational Thinking handout
   Anthony Smith, The Geopolitics of Information.
   good 1 2 3 4 5 poor
   Comments:

2. Nature of Information II: Interpretation. good 1 2 3 4 5 poor
   Readings: Three Mile Island. good 1 2 3 4 5 poor
   Comments:

3. Information Theory and Systems Analysis. good 1 2 3 4 5 poor
   Readings: System Design--Principles and Techniques.
   Managing Information for Rural Development Projects.
   good 1 2 3 4 5 poor
   Comments:

4. Forms of Information. (samples, ie., 60 minutes) good 1 2 3 4 5
   Readings: ..Relationship between information levels.
   good 1 2 3 4 5 poor
   Comments:

5. Sources I: Information Structure in Three Disciplines.1 2 3 4 5
   Readings: Information Needs and Uses. Good 1 2 3 4 5 poor
   Comments:

6. Sources II: Indexing for Management (data base demonstration)
   good 1 2 3 4 5 poor
   Readings: Interactions between Public and Private Sectors...
   good 1 2 3 4 5 poor
   Comments:

7. Sources III: Information Managment Decesions (govt., ERIC)
   good 1 2 3 4 5 poor
   Readings: Coastal and Marine Information Programs.
   good 1 2 3 4 5 poor

8. Information Dissemination: Mass Media (films)
   good 1 2 3 4 5 poor
   Readings: Big Media Free Press
   Environmental Education: Can the Media do the Job?
   good 1 2 3 4 5 poor
   Comments:

9. Information Dissemination: Alternative Media (Cable trip)
good 1 2 3 4 5 poor
Readings: Leonard Henney, Alternative film history
Cable sheet
Alternative journalism, Other Voices
good 1 2 3 4 5 poor
Comments:

10. Information Technology and Futures. good 1 2 3 4 5 poor
Readings: Gadgets and Gimmicks: The Communications Revolution
Impact of Technology Upon Environmental Mass Commctn.
good 1 2 3 4 5 poor
Comments:

11. International Information Issues (discussion & simulation)
good 1 2 3 4 5 poor
Readings: Info. Services Issues in LDC
Communication & Development by Everett Rogers
UNESCO, Towards an American Agenda for a New World Order of Communications.
good 1 2 3 4 5 poor
Comments:

12. Midterm bibliography: good 1 2 3 4 5 poor
Comments:

13. Short assignments: good 1 2 3 4 5 poor.
Comments:

14. Final project: good 1 2 3 4 5 poor.
Comments:

15. Overall comments on course readings:

16. Overall course impression:

17. Which topics were the most significant, interesting or useful?

18. Which topics or sessions would you recommend for a workshop?

20. What information topics were not covered?